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A
Field Guide
to
MONTANA FISHES

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A Field Guide to MONTANA FISHES

This handbook is a compilation of clues used for identifying fishes in the field. It includes:

- A simple visual key to fish families
- Illustrations of every Montana fish with distinguishing features labeled
- Color illustrations of 30 Montana game and sport fishes
- Montana's record-setting fish through 2001
- A list of Montana fishes indicating game fishes, fishes of special concern, and endangered species

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A Field Guide to MONTANA FISHES

THIRD EDITION

Revised by

GEORGE D. HOLTON
HOWARD E. JOHNSON



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UNLESS OTHERWISE NOTED

LUKE DURAN – MACINTOSH® GRAPHIC DESIGN AND LAYOUT

LUKE DURAN – MAP GRAPHICS

PAUL F. UPDIKE – COVER PHOTO



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TABLE OF CONTENTS

PREFACE VI

MAP OF MONTANA'S MAJOR DRAINAGES 1

VISUAL KEY TO FISH FAMILIES 2

EXPLANATION OF INFORMATION IN SPECIES DESCRIPTIONS 4

IMAGINARY FISH SHOWING EXTERNAL FEATURES 5

COUNTS USED IN FISH IDENTIFICATION 6

GLOSSARY 7

DESCRIPTIONS OF MONTANA FISHES

 Sturgeon Family 9

 Paddlefish Family 12

 Gar Family 13

 Pike Family 14

 Mooneye Family (*Goldeye*) 15

 Sucker Family (*Suckers, Redhorse, Carpsucker, Buffalos*) 16

 Minnow Family (*Minnows, Shiners, Daces, Chubs, Pikeminnow, Peamouth, Goldfish, Carp*) 21

 Mudminnow Family 34

 Killifish Family 35

 Livebearer Family (*Mosquitofish, Mollies, Swordtail, Platyfish*) 36

 Smelt Family 39

 Trout Family (*Trouts, Salmons, Grayling, Whitefishes*) 48

 Trout-perch Family 63

 Bullhead Catfish Family (*Catfish, Bullheads, Stonecat*) 64

 Codfish Family (*Burbot*) 66

 Stickleback Family 67

 Sunfish Family (*Sunfishes, Black Basses, Crappies, Rock Bass*) 68

 Drum Family 76

 Sculpin Family 77

 Temperate Bass Family (*White Bass*) 80

 Perch Family (*Perch, Walleye, Sauger, Darter*) 81

SPAWNING SEASONS 84

PROCEDURE FOR HAVING A FISH DECLARED A STATE RECORD 84

MONTANA'S RECORD-SETTING FISH (*through 2001*) 85

ANSWERS TO COMMONLY ASKED QUESTIONS 87

ADDITIONAL SOURCES OF INFORMATION ON MONTANA FISHES 88

LIST OF MONTANA FISHES 89

INDEX 92

COLOR ILLUSTRATIONS OF GAME AND SPORT FISHES 40



DEDICATION

To the memory of Dr. C. J. D. Brown,
mentor and friend,
fisheries professor at Montana State University,
author of *Fishes of Montana*.



PREFACE

This is the third edition of a field guide designed to provide a concise, easily understood handbook for identifying Montana fishes. The first edition was compiled by George D. Holton and published by Montana Fish, Wildlife & Parks in 1990. This was revised by Holton and Howard E. Johnson in a second edition published in 1996. Changes in this third edition include changing the name of the northern squawfish to northern pikeminnow and deletion of the shorthead sculpin (*Cottus confusus*). As the scientific name implies, there has been confusion over the taxonomy of this "species" for many years. New genetic evidence indicates that this fish is a variant of the mottled sculpin (*Cottus bairdi*). As this edition goes to press, 85 species in 21 families are known to be in Montana state waters. In addition to these species, three unusual hybrids are described: the northern redbelly dace x finescale dace, the tiger muskellunge, and the tiger trout.

Information on characteristics, habitats, and spawning seasons of the fishes was gleaned from many publications and augmented with observations by the authors plus numerous suggestions from fisheries personnel of Montana Fish, Wildlife & Parks and other agencies. Dr. William R. Gould, Professor Emeritus, Biology Department, Montana State University, and Dr. Reeve M. Bailey, Curator Emeritus of Fishes, Museum of Zoology, University of Michigan, were particularly helpful.

Designation of individual species as native or introduced and descriptions of native ranges are based, as a starting point, on information in C. J. D. Brown's *Fishes of Montana* (Big Sky Books, Bozeman, 1971) and supplemented by other literature.

The range maps were initially prepared using maps from *Fishes of Montana* enhanced with information from Montana Fish, Wildlife & Parks' stream and lake databases. These were updated for this edition with information from field personnel, department databases, and the fish collection at Montana State University.

Models for the black-and-white fish paintings were taken from a number of publications; however, *Handbook of Fishes of Kansas* by Frank B. Cross (University of Kansas Museum of Natural History, Misc. Publ. 45, 1967) and *Fishes of Montana* were the primary sources.

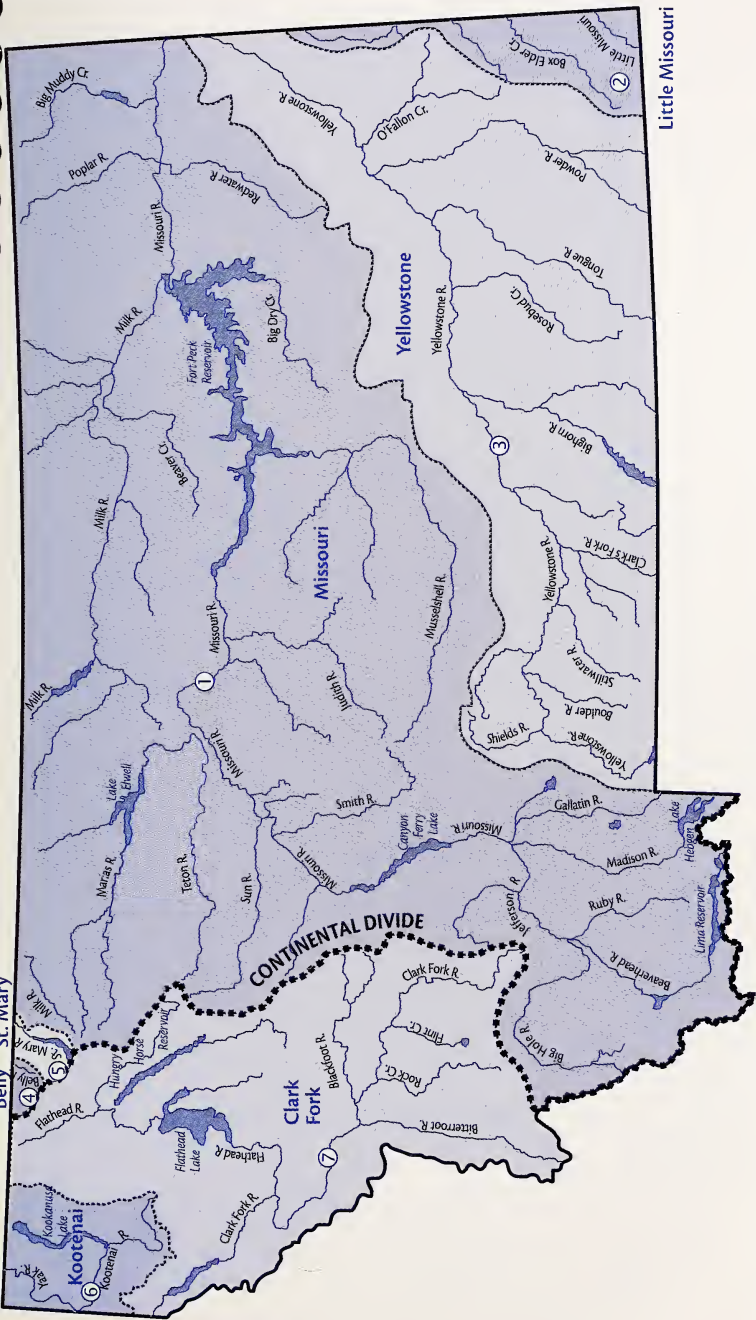
We are indebted to the many individuals who helped prepare this guide and to the authors of the many books and articles from which much of the information was selected. Space limitation prevents individual recognition, but we are sincerely grateful.

We hope this field guide is useful. To facilitate future revisions, the text is in a word processing file. Please send corrections, new information, and suggestions to: Fish ID Guide, Montana Fish, Wildlife & Parks, 1420 East Sixth Avenue, Helena, MT 59620.

George D. Holton
Howard E. Johnson

Helena, Montana
November 2002

MAP OF MONTANA'S MAJOR DRAINAGES



Montana is the only state with headwaters of rivers flowing to the Gulf of Mexico, Hudson Bay, and the Pacific Ocean. Waters from the (1) Missouri, (2) Little Missouri, and (3) Yellowstone rivers reach the Gulf of Mexico by way of the Mississippi River; the (4) Belly and (5) Saint Mary river drainages are headwaters of the South Saskatchewan River Drainage and flow to Hudson Bay through the Saskatchewan-Nelson river system; and water from the (6) Kootenai River and (7) Clark Fork reach the Pacific Ocean via the Columbia River. The Continental Divide has separated westward-flowing and eastward-flowing waters for millions of years and has had a major influence on the distribution of fishes.

VISUAL KEY TO FISH FAMILIES

This is a visual key to the arrangement of fishes in this book. Families are aligned according to the type and position of fins on the back.¹ Use the drawings to determine which family or families a fish could be in, then go to pages indicated for descriptions of family members. In the text, look-alike fishes are generally grouped.



STURGEON FAMILY

pp. 9–11



PADDLEFISH FAMILY

p. 12



GAR FAMILY

p. 13



PIKE FAMILY

p. 14



MOONEYE FAMILY

(Goldeye)

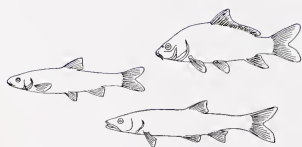
p. 15



SUCKER FAMILY

(Redhorse, Suckers, Buffalos, Carpsucker)

pp. 16–20



MINNOW FAMILY

(Carp, Chubs, Daces, Pikeminnow, Peamouth, Goldfish, Minnows, Shiners)

pp. 21–33



MUDMINNOW FAMILY

p. 34



KILLIFISH FAMILY

p. 44



LIVEBEARER FAMILY

(Mosquitofish, Tropical Aquarium Fishes)

pp. 36–38



SMELT FAMILY

p. 39



TROUT FAMILY

(Salmons, Trouts, Grayling, Whitefishes)

pp. 48–62



TROUT-PERCH FAMILY

p. 63



BULLHEAD CATFISH FAMILY

(Catfish, Bullheads, Stonecat)

pp. 64–65



CODFISH FAMILY

(Burbot)

p. 66



STICKLEBACK FAMILY

p. 67



SUNFISH FAMILY

(Crappies, Sunfishes, Rock Bass, Black Basses)

pp. 68–75



DRUM FAMILY

p. 76



SCULPIN FAMILY

pp. 77–79



TEMPERATE BASS FAMILY

(White Bass)

p. 80



PERCH FAMILY

(Perch, Walleye, Sauger, Darter)

pp. 81–83

¹Suggested by Mervin F. Roberts in *Fisheries*, Jan./Feb. 1986, p. 66.

EXPLANATION OF INFORMATION IN SPECIES DESCRIPTIONS

NAMES: The common and scientific (*Latinized*) names of fishes (*except the subspecies names for cutthroat trout*) conform to those recommended by the American Fisheries Society. "Other names" are local names or alternative common names. They are listed so the reader can associate the recommended common names with ones that may be more familiar.

LENGTHS: Two lengths are usually given, for example: 12" (23"). The first is a typical adult size for individuals taken by sampling or sport fishing, while the second (*in parentheses*) is the usual Montana maximum (*measured from the tip of the snout to the farthest tip of the tail fin*); it is not necessarily the record length, but a length seldom exceeded. If only one length is given, it is a typical length. (*Record weights for fishes taken by sport fishing are given on pp. 85–86.*)

MAPS: The known distribution of a species or subspecies is shown in color (*blue*) on the map. When large areas are indicated, there may be population gaps or sparse populations within the range resulting from lack of suitable streams and lakes, or from failure of the species to reach local areas through natural migration or introduction by man. On the other hand, maps for some species may not include all locations. This is especially true for maps of sport and forage fishes used in private ponds.

HABITAT: The habitat description refers to the preferred or usual habitat and is simplified for the sake of brevity.

CONSIDERATIONS IN IDENTIFYING FISHES

Location: As a rule, the place where the fish to be identified was taken should be within the known range of the species (*see distribution map*) and should fit the habitat described.

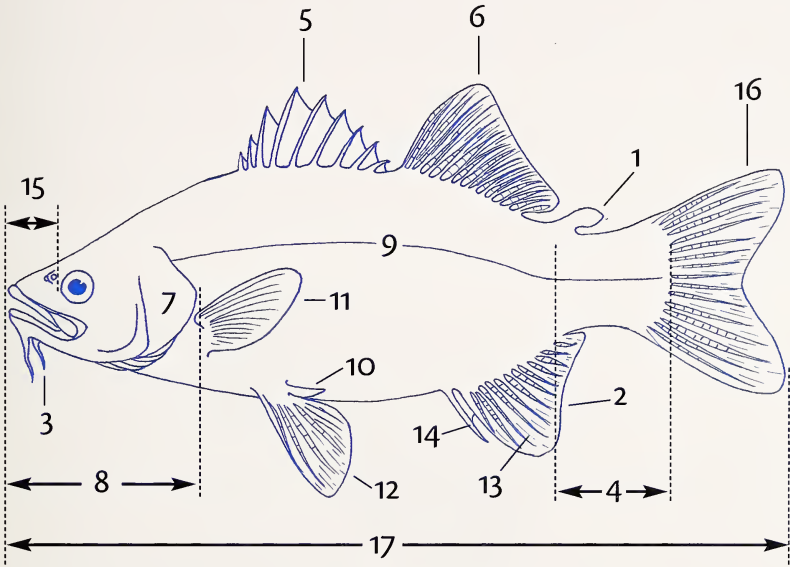
Color: Color alone is seldom reliable in fish identification. It may vary from one habitat to another, from season to season (*many fishes are more colorful at spawning time*), and between sexes. Also, color usually changes after death. Color illustrations in this book feature adult males, which are usually the most brightly colored individuals.

Body shape and hybrids: There is sometimes variation in body shape between breeding males and females and between immature fish and adults. Then, too, a hybrid (*a cross between different species or subspecies*) is sometimes encountered. A hybrid's characteristics are usually intermediate between those of the parental forms.

Identifying fishes is not always easy, but with practice you will become skillful.

IMAGINARY FISH SHOWING EXTERNAL FEATURES

(Note: no fish has all of these features)



- | | |
|------------------------------|-----------------------------|
| 1. Adipose fin | 10. Pelvic axillary process |
| 2. Anal fin | 11. Pectoral fin |
| 3. Barbel | 12. Pelvic fin |
| 4. Caudal peduncle | 13. Ray |
| 5. First dorsal fin (spines) | 14. Spine |
| 6. Second dorsal fin (rays) | 15. Snout |
| 7. Gill cover | 16. Tail fin or caudal fin |
| 8. Head length | 17. Total length |
| 9. Lateral line | |

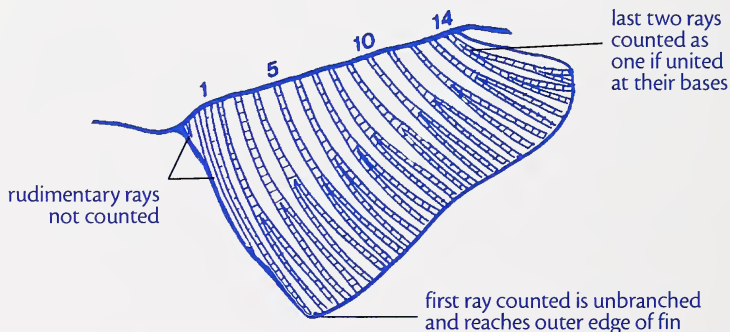
COUNTS USED IN FISH IDENTIFICATION

HOW TO COUNT SCALES IN THE LATERAL LINE

The lateral line (*shown in the illustration on p. 5*) is a series of sensory pores. Scales along it (*each has a pore*) are counted from the gill cover to the base of the tail fin. The base is located at the crease created in the caudal peduncle when the tail is bent sideways. Scales behind the crease are not counted. When the lateral line is missing, the scales along the side where it would be are counted (*referred to as lateral series*).

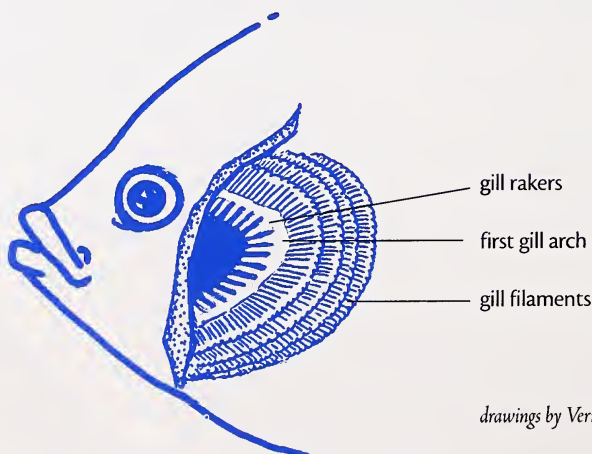
HOW TO COUNT FIN RAYS

Rays are counted at their bases, not their tips. All rays in the pelvic and pectoral fins are counted. Rays in the dorsal and anal fins are counted as shown in the following illustration:



HOW TO COUNT GILL RAKERS

All gill rakers, including rudiments on the first (*outermost*) arch, are counted.



drawings by Vern Craig

GLOSSARY

(Also, see *IMAGINARY FISH SHOWING EXTERNAL FEATURES and COUNTS USED IN FISH IDENTIFICATION* on pp. 5–6.)

Adipose fin: A small, rayless, fleshy fin along the midline of the back behind the dorsal fin. Present on members of trout, bullhead catfish, smelt, and trout-perch families.

Anal fin: The unpaired fin along the midline of a fish's underside in front of the tail fin.

Axillary process: See *Pelvic axillary process*.

Barbel: A slender, flexible projection on the mouth or chin used for touch or taste. Barbels may be long and fleshy as in catfishes, or flaplike or threadlike as in some minnows.

Belly: The underside of a fish from just behind the pectoral fins to the front of the anal fin.

Breast: The underside of a fish from the junction of the gill covers to just behind the pectoral fins.

Canine teeth: Strong, sharp, cone-shaped teeth, longer than other teeth, as in walleye.

Caudal peduncle: The part of a fish's body between the anal fin and the base of the tail fin.

Char (*charr*): See p. 87.

Cold, cool, warmwater fishes: See p. 87.

Cutthroat slash: A red to orange line in the skin fold on each side of the lower jaw of cutthroat trout, hence the name of this species.

Dorsal fin(s): A fin or two fins along the midline of the back, usually midway between the head and tail fin, with supporting rays and/or spines.

Endangered species: As used in this book, a designation under the federal Endangered Species Act for a native Montana fish that is in danger of extinction throughout all or a significant portion of its range. Endangered species are indicated in the list of fishes starting on p. 89. They retain their status as state fishes of special concern.

Fish of special concern: A designation jointly made by Montana Fish, Wildlife & Parks and the Montana Chapter of the American Fisheries Society for a native fish with limited habitats and in most cases limited numbers in Montana. A fish so indicated is not necessarily threatened or endangered but may require special attention. Fishes of special concern are indicated in the list of fishes starting on p. 89.

Gill rakers: Knobby or comblike projections on the front edge of the gill arches (see *illustration* on p. 6). Some fishes use them to filter small food organisms from the water. Gill rakers are seen by raising the gill cover.

Gonopodium: A rodlike extension of anal fin rays in male livebearers used to transfer sperm into the female.

Lateral line: A line of pores along a fish's side (*one per scale if the fish has scales*) that open into an underlying sensory canal. The lateral line is said to be complete if it extends from the gill cover to the base of the tail fin, and incomplete if it extends only partway. See *How to count scales in the lateral line* on p. 6.

Length: *see* Total length below; also Lengths on p. 4.

Native: A species occurring naturally in a particular area (*not introduced by man*).

Nuptial tubercles: Small, horny structures that develop on the skin of some fishes during breeding season.

Paired fins: The pectoral and pelvic fins. They occupy somewhat the same position as the forelimbs and hindlimbs, respectively, in higher animals.

Palatine teeth: Teeth in the roof of the mouth on a pair of bones that extend outward and rearward on each side (*see illustration on p. 77*).

Parr marks: Dark, vertical blotches on the young of many members of the trout family; these may persist to adulthood in a few species.

Pectoral fins: The forward or uppermost paired fins on each side just behind the head.

Pelvic axillary process: A fleshy or scaly dagger-shaped projection at the base of each pelvic fin, as in members of the trout family.

Pelvic fins: The paired fins on the lower body behind or below the pectoral fins.

Prickles: Small projections on the skin (*apparently vestiges of scales*) that feel rough to the touch, as in sculpins.

Rays (soft rays): The supporting structures in fins that are segmented (*crossed by grooves or striations*), usually flexible, and often branched.

Rudiment or rudimentary: Not fully developed; for example, the short, unbranched rays in some fins.

Soft rayed: A fin without spines or a fish with only soft-rayed fins.

Spines: 1. Fin rays that are not branched or segmented (*i.e., not crossed by grooves or striations*) and that are usually sharp and stiff. 2. The hardened soft rays on such fishes as common carp and members of the bullhead catfish family. 3. The straight or curved, sharp structures on a bone, such as spines on the gill cover of sculpins.

Spiny-rayed fish: A fish in which the first dorsal fin or the front part of the dorsal fin has spine-type rays. Usually, it also has spiny fin rays in the anal fin.

Threatened species: A designation under the federal Endangered Species Act for a native Montana fish that is likely to become an endangered species within the foreseeable future. At the time of this writing, no Montana fish is designated threatened.

Total length: The straight-line distance from the tip of the snout (*with mouth closed*) to the farthest tip of the tail fin.

Turbid: Having sediment suspended in the water; muddy or silty.

DESCRIPTIONS OF MONTANA FISHES

STURGEON FAMILY

Acipenseridae

Sturgeons are descendants of an ancient group of fishes. They are characterized by a long snout with the mouth underneath behind four long barbels, and a "backbone" that extends into the enlarged upper lobe of the tail fin. Instead of the typical overlapping scales they have several lengthwise rows of shieldlike plates.

WHITE STURGEON

Acipenser transmontanus

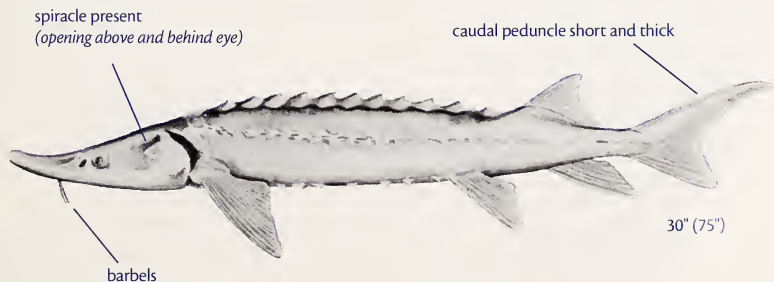
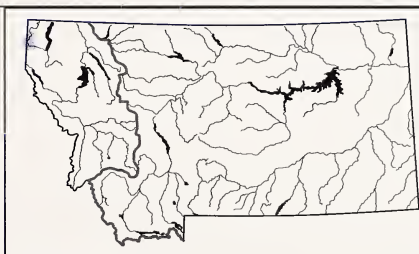
COLOR: Gray.

SIMILAR SPECIES: Other Montana sturgeons have a long, slender caudal peduncle, have no spiracle, and are found only east of the Continental Divide.

HABITAT: Landlocked white sturgeon live in large, cool rivers and lakes.

ORIGIN: Pacific Coast, from mid-California to Alaska, where it is anadromous (*spending part of its life at sea and ascending rivers to spawn*). Also native, but landlocked, in upper Columbia River Drainage including Kootenai River downstream from the falls in Montana.

COMMENT: The Kootenai River white sturgeon is listed as endangered under the federal Endangered Species Act. Montana's population decreased significantly after construction of Libby Dam in 1972 and may have vanished from the state.



PALLID STURGEON

Scaphirhynchus albus

COLOR: Back and sides gray to tan, underside yellow to white.

OTHER CHARACTERISTICS:

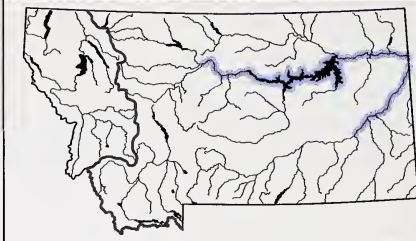
Dorsal fin has 37 to 42 rays; anal fin has 24 to 28 rays.

SIMILAR SPECIES: See (1) shovelnose sturgeon and (2) white sturgeon.

HABITAT: Large, turbid rivers over sand or gravel bottom, usually in strong current; also impoundments of these rivers.

ORIGIN: Native in Missouri-Mississippi river drainage, including Montana.

COMMENT: Rare in Montana and also rare in downstream states. Listed as endangered under the federal Endangered Species Act.



barbels attached close to mouth, about one-third the distance from mouth to tip of snout

outer barbels 2 or more times the length of inner barbels (be alert for broken barbels)



SHOVELNOSE STURGEON

Scaphirhynchus platyrhynchus

OTHER NAME: Hackleback

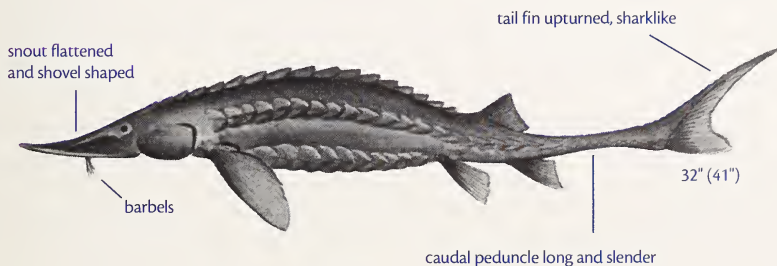
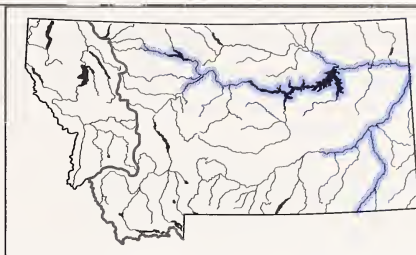
COLOR: See p. 40

OTHER CHARACTERISTICS: Dorsal fin has 30 to 36 rays; anal fin has 18 to 23 rays.

SIMILAR SPECIES: (1) pallid sturgeon differs in position and lengths of barbels, and has more rays in its dorsal and anal fins. (2) See white sturgeon.

HABITAT: Large rivers over sand or gravel, often in strong current; also impoundments of these rivers. Tolerates turbid water.

ORIGIN: Native in Missouri-Mississippi river drainage, including Montana.



barbels attached about one-half the distance from mouth to tip of snout

outer barbels barely longer than inner barbels



PADDFISH FAMILY

Polyodontidae

Paddlefishes are primitive fishes, relicts of a bygone era. They are readily identified by the long paddlelike snout, long, tapered gill covers, and the “backbone” bent up into the upper lobe of the tail fin.

PADDFISH

Polyodon spathula

OTHER NAME: Spoonbill cat.

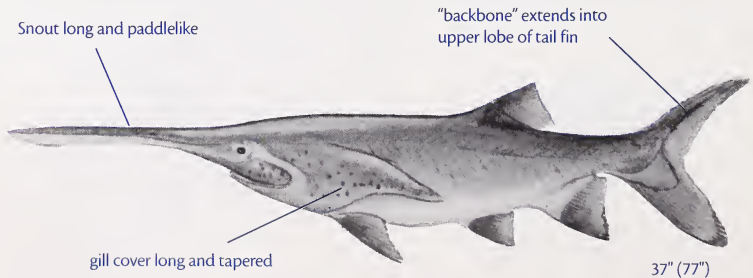
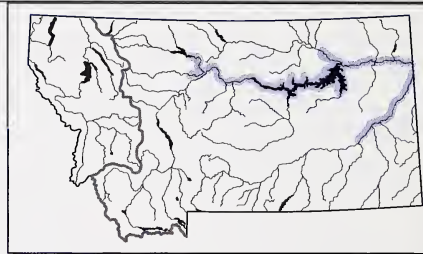
COLOR: See p. 49.

OTHER CHARACTERISTICS: Body smooth and virtually scaleless.

HABITAT: Slow or quiet waters of large rivers or impoundments. Spawns on gravel bars of large rivers during spring high water. Tolerates or perhaps seeks turbid water.

ORIGIN: Native to Montana. Year-round populations in Fort Peck Lake and in dredge cuts below Fort Peck Dam. Spring spawning run from North Dakota up Missouri River into Montana. Majority of run branches off into Yellowstone River, while remainder continues up Missouri River to Fort Peck Dam. Also, spawning run from Fort Peck Lake upstream into Missouri River.

COMMENT: This is a fish of special concern, as there are only six major reproducing populations left in the United States. Two of these are in Montana. It swims with its mouth open and strains plankton (*microscopic plants and animals that drift or swim weakly*) from the water with its comblike gill rakers. Function of the paddlelike snout is not completely understood. It may be a sensory organ for locating concentrations of food and a stabilizer to prevent the nosediving that might otherwise result from the drag created by water entering the gaping mouth.



GAR FAMILY

Lepisosteidae

Like sturgeons and paddlefish, gars are primitive fishes, little changed over millions of years. Montana's only representative, the shortnose gar, is a typical member of the family.

SHORTNOSE GAR

Lepisosteus platostomus

COLOR: Olive green to brown, grading to white below.

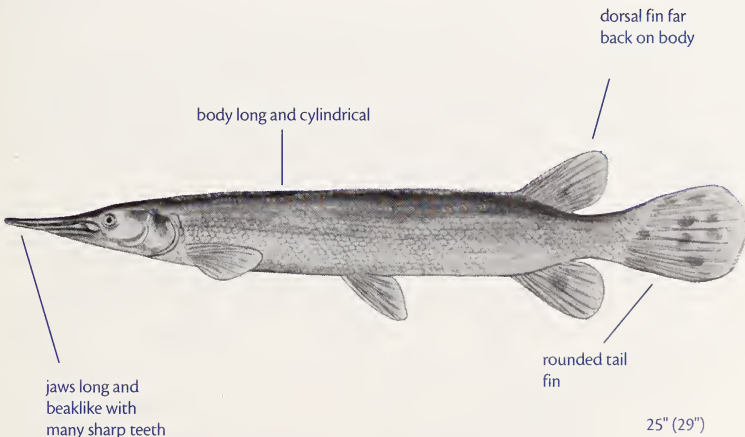
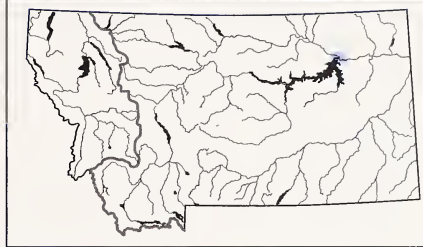
OTHER CHARACTERISTICS:

Body covered with thick, nonoverlapping, diamond-shaped scales.

HABITAT: Large rivers, their backwaters, and impoundments.

ORIGIN: Native in Mississippi and Missouri river drainages upstream to Fort Peck Dam in Montana.

COMMENT: Rare in Montana and designated a fish of special concern. Gar eggs are poisonous to humans.



PIKE FAMILY

Esocidae

Family members have a flattened, beaklike snout and a large mouth with many sharp teeth. The dorsal fin is placed far back on the long body. The “wall-eyed pike” (actually walleye) is not a true pike but a member of the perch family (p. 82).

NORTHERN PIKE

Esox lucius

OTHER NAMES: Pike, northern, pickerel, jack, hammer handle, slimer.

COLOR: See p. 40.

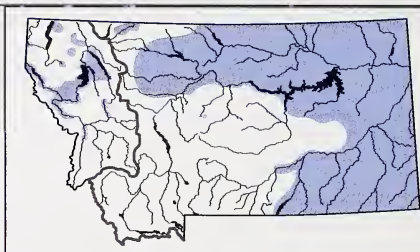
SIMILAR SPECIES: The tiger muskellunge—a sterile hybrid of the northern pike and muskellunge—has been planted in a few small reservoirs east of the Continental Divide (the muskellunge is not present in Montana waters).

The tiger muskellunge's body has vertical greenish stripes on a light background (juvenile northern pike have light vertical stripes on a dark background).

HABITAT: Bays of lakes and reservoirs; pools and backwaters of streams. Seeks areas with dense vegetation.

ORIGIN: Natural distribution is circumpolar—i.e., across northern Eurasia and northern North America. Native to Montana in the South Saskatchewan River Drainage. Now widely distributed in the state due to introductions by humans.

COMMENT: The northern pike is a voracious fish that eats mostly other fishes. Its unauthorized introduction into waters west of the Continental Divide has destroyed several native trout populations; as this species moves down the Columbia River Drainage, it poses a significant threat to native fish populations.



snout flattened like a duck's bill

body long

dorsal fin near tail fin

numerous sharp teeth

pale spots

20" (45")

tiger
muskellunge



MOONEYE FAMILY

Hiodontidae

Members of this family are moderate-sized fishes with deep, flat-sided bodies covered by large, silvery scales. The dorsal fin is set back over the long anal fin. Montana has one species.

GOLDEYE

Hiodon alosoides

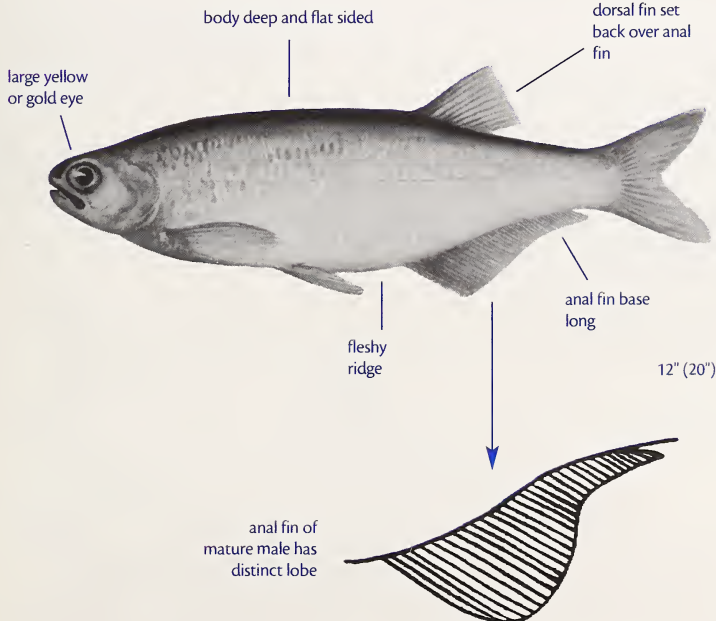
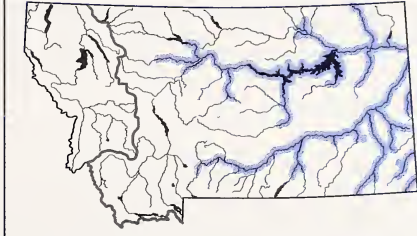
OTHER NAMES: Skipjack, shiner, shad.

COLOR: See p. 41.

OTHER CHARACTERISTICS: Large scales. Well-developed teeth on jaws, roof of mouth, and tongue.

HABITAT: Large rivers and reservoirs; adapted to turbid water.

ORIGIN: Native to Montana.



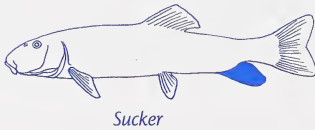
SUCKER FAMILY

Catostomidae

A typical sucker has its mouth on the underside of the head with extensible lips adapted for sucking food from the bottom. The mouth is always toothless and the fins soft rayed.

Young suckers may be confused with minnows. The former, however, usually have a "sucker mouth," never have barbels, and have the anal fin set farther back on the body. On suckers the distance from the front of the anal fin to the tip of the snout is over 2½ times the distance from the front of the anal fin to the base of the tail fin. This is also true on common carp and goldfish, but they are easily told from suckers by the saw-toothed spines in their dorsal and anal fins. If the proportion is less than 2½ times, the fish is a minnow.

Position of anal fin



SHORthead REDHORSE

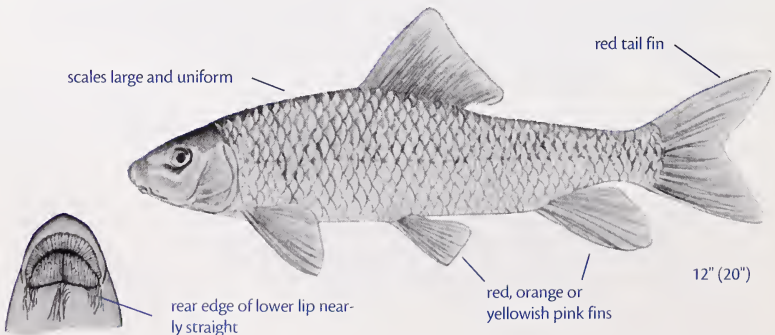
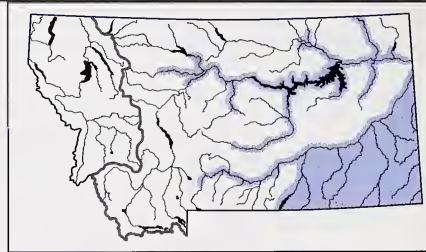
Moxostoma macrolepidotum

COLOR: Sides golden or silvery, back olive to brown with golden reflections, underside white to yellow. Upper body scales have dark pigment at their bases.

SIMILAR SPECIES: No other Montana sucker has a red tail fin.

HABITAT: Moderately large rivers with sand, gravel, or rocky bottom, intermediate temperatures, and swift current.

ORIGIN: Native to Montana.



LARGESCALE SUCKER

Catostomus macrocheilus

OTHER NAME: Coarsescale sucker.

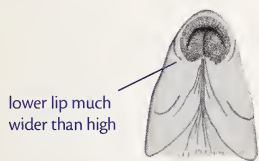
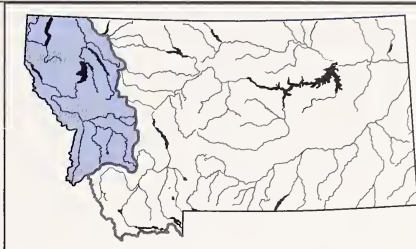
COLOR: Back and sides dark olive gray, changing abruptly to white or yellowish on underside.

OTHER CHARACTERISTICS: Dorsal fin usually has 13 to 15 rays; its base is long. Scales are medium sized, 62 to 80 in lateral line.

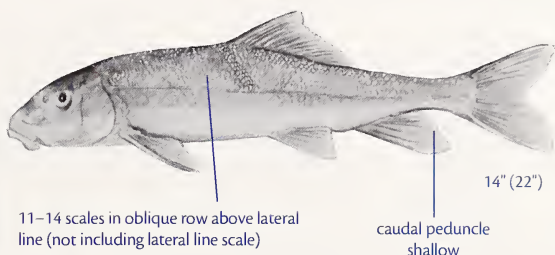
SIMILAR SPECIES: (1) White sucker has 8 to 10 scales above lateral line; lower lip is much wider than high. It is not found west of the Continental Divide (largescale sucker is only west of the Divide). (2) See longnose sucker.

HABITAT: Lakes and rivers.

ORIGIN: Native to Montana.



lower lip much wider than high



11–14 scales in oblique row above lateral line (not including lateral line scale)

caudal peduncle shallow

14" (22")

WHITE SUCKER

Catostomus commersoni

OTHER NAMES: Common sucker, coarsescale sucker.

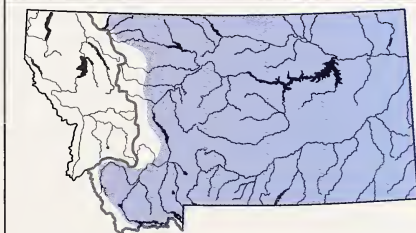
COLOR: Dusky olive brown to nearly black above, shading to cream or white below.

OTHER CHARACTERISTICS: Dorsal fin has 11 to 13 rays. Scales are medium sized, 60 to 75 in lateral line.

SIMILAR SPECIES: (1) Longnose sucker has a longer snout and smaller scales (*its smaller scales make it noticeably smoother to the touch*). (2) See largescale sucker.

HABITAT: All kinds of lakes and streams but avoids rapid current—very adaptable.

ORIGIN: Native to Montana.



lower lip much wider than high



8–10 scales in oblique row above lateral line (not including lateral line scale)

13" (21")

LONGNOSE SUCKER

Catostomus catostomus

OTHER NAME: Finescale sucker.

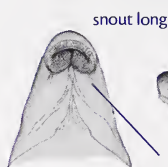
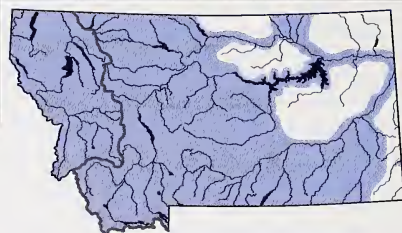
COLOR: Back, upper sides, and head to below the eye dark olive to slate; underparts white or yellow. Breeding males are nearly jet black on upper half of head and body and may have red midside band.

OTHER CHARACTERISTICS: Has 9 to 12 rays in dorsal fin, and more than 15 scales above lateral line (see illustration for either white sucker or largescale sucker).

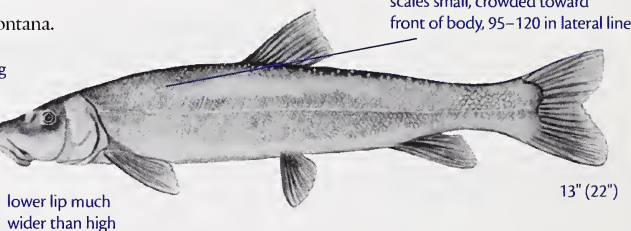
SIMILAR SPECIES: (1) Largescale sucker's dorsal fin base is noticeably longer than the longnose sucker's; largescale also has a shorter snout and larger scales. See (2) white sucker and (3) mountain sucker.

HABITAT: Clear, cold streams and lakes; sometimes moderately warm waters and turbid waters.

ORIGIN: Native to Montana.



snout long



lower lip much wider than high

MOUNTAIN SUCKER

Catostomus platyrhynchus

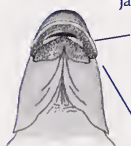
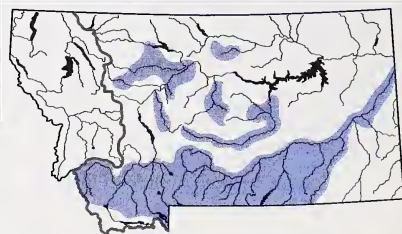
COLOR: Back and upper sides dusky or dark green with black specks; may have dark mottling shaped like saddles across the back; lower body whitish. Both sexes have a reddish orange band along sides during breeding season; band is brighter, longer, and wider in male.

OTHER CHARACTERISTICS: Mouth is so long it sometimes exceeds head width.

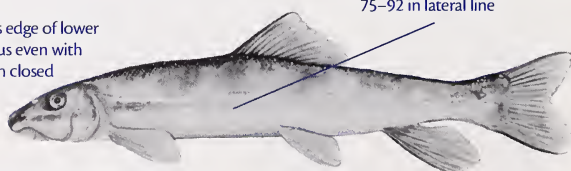
SIMILAR SPECIES: No other Montana sucker has a notch in each corner of mouth.

HABITAT: Clear, cold streams with rubble, gravel, or sand bottom; sometimes turbid streams, but seldom lakes.

ORIGIN: Native to Montana.



cartilaginous edge of lower jaw obvious even with mouth closed



distinct notch on each side between upper and lower lips

7" (9")

BLUE SUCKER

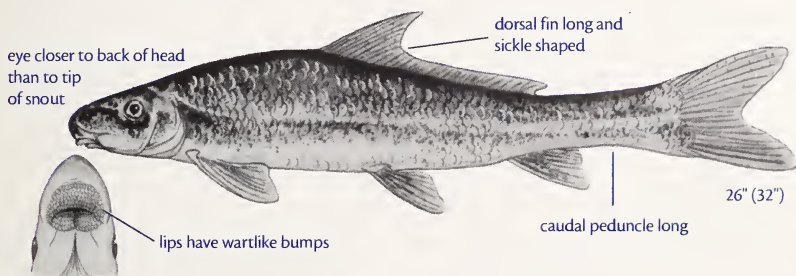
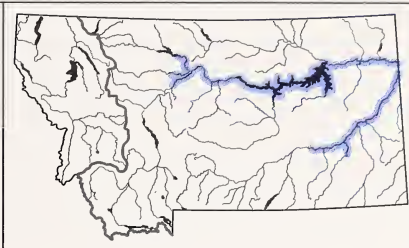
Cycoreptus elongatus

COLOR: Back and sides dark blue to dark olive, underside white.

HABITAT: Swift currents of medium to large rivers.

ORIGIN: Native to Montana.

COMMENT: A fish of special concern. It has been adversely affected by habitat changes, particularly those caused by large dams that block passage to spawning grounds, alter the streamflow, and eliminate peak flows that initiate spawning runs. Dams also discharge cold, clear water as opposed to the warm, turbid waters in which this species evolved.



BIGMOUTH BUFFALO

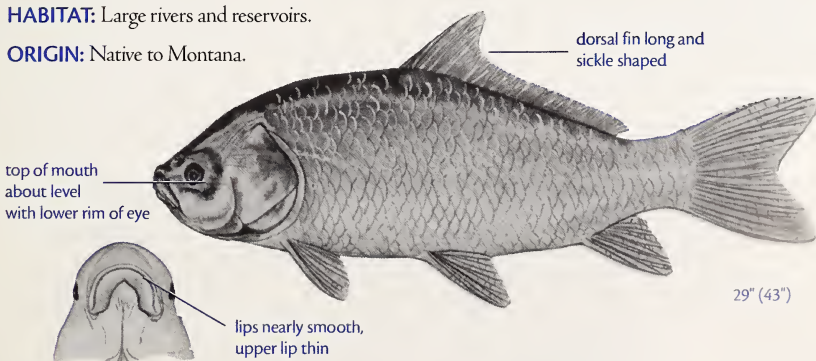
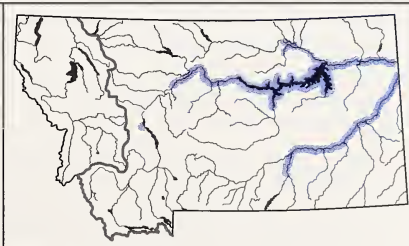
Ictiobus cyprinellus

COLOR: Usually dark colored (brownish or blackish), often with a coppery sheen; sometimes greenish or gray. Underside whitish or yellow; fins dark.

SIMILAR SPECIES: (1) Smallmouth buffalo's color is generally lighter, top of mouth is well below lower margin of eye, and lips are thicker and more deeply grooved. See (2) river carpsucker and (3) common carp.

HABITAT: Large rivers and reservoirs.

ORIGIN: Native to Montana.



SMALLMOUTH BUFFALO

Ictiobus bubalus

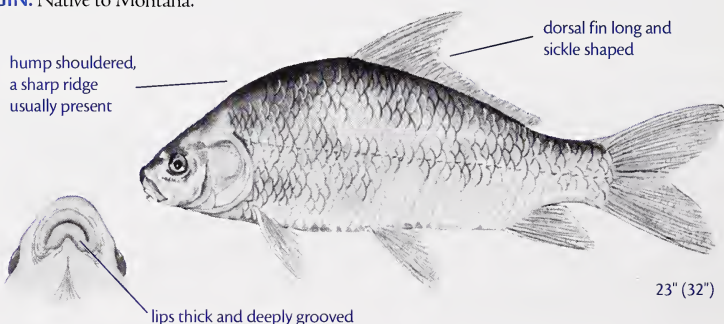
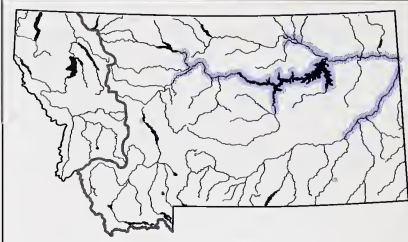
COLOR: Bronze to slate or olive on back and sides, often with a bluish cast; lighter below. Fins dark.

OTHER CHARACTERISTICS: Top of upper lip is well below lower margin of eye.

SIMILAR SPECIES: See (1) bigmouth buffalo, (2) river carpsucker, and (3) common carp.

HABITAT: Reservoirs, quiet areas of rivers, and sometimes small streams.

ORIGIN: Native to Montana.



RIVER CARPSUCKER

Carpionodes carpio

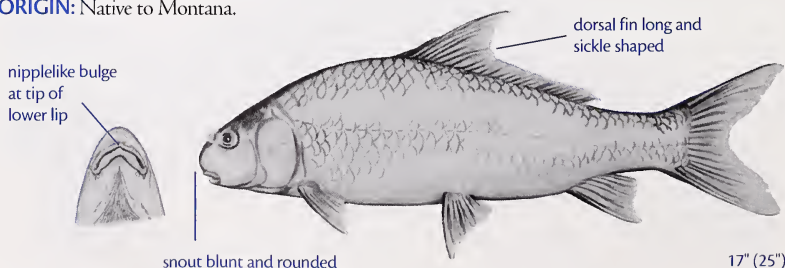
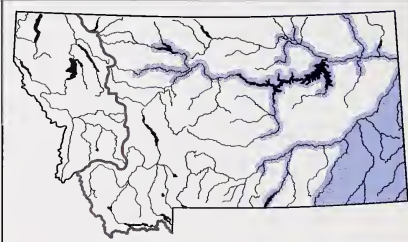
OTHER NAMES: White carp, silver carp.

COLOR: Sides silvery; back brown to olive, underside white. Lower fins whitish.

SIMILAR SPECIES: (1) Buffalos are darker colored; also, they do not have a nipplelike bulge at tip of lower lip. Smallmouth buffalo usually has a sharp ridge on back in front of dorsal fin; top of bigmouth buffalo's mouth is about level with lower margin of eye. (2) See common carp.

HABITAT: Small to large rivers, especially backwaters; also reservoirs.

ORIGIN: Native to Montana.



MINNOW FAMILY

Cyprinidae

Although the term “minnow” is often applied to all young or small fishes, it is properly used only in reference to members of the minnow family. Most minnows are small (*less than 5 inches*), but some become large. For example, common carp and northern pikeminnow reach sizes in excess of 2 feet.

Family members have a toothless mouth and soft-rayed fins (*except for a spine in the dorsal and anal fins of common carp and goldfish*). Some have barbels.

Adult specimens of most minnows can be identified from the pictures, descriptions, and comparisons in this guide. Information in the table on p. 33 will help with look-alikes, and the distribution maps will give valuable hints.

The bulk of a typical minnow population, however, is composed of juveniles. Some immature minnows are distinctive and identifiable, but many are so similar and have key characteristics (*such as barbels*) so hard to find that they cannot be positively identified in the field.

COMMON CARP

Cyprinus carpio

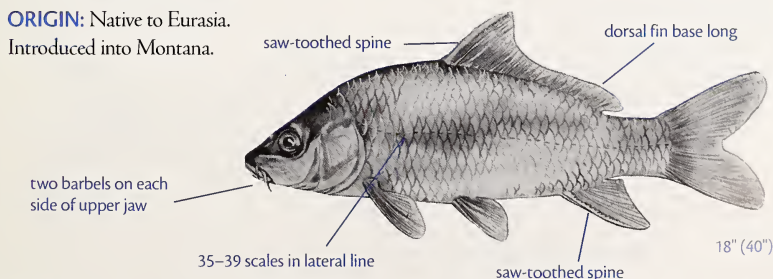
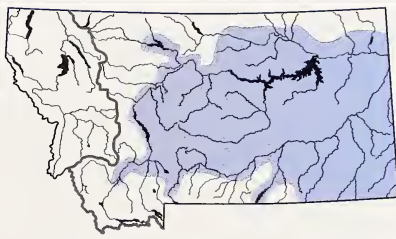
COLOR: Overall bronze with a dark brown to olive green back and yellowish underside.

OTHER CHARACTERISTICS: Some individuals, called mirror carp, have enlarged scales scattered over the body with bare patches between. Leather carp are scaleless.

SIMILAR SPECIES: Goldfish have no barbels and fewer scales in the lateral line. Common carp and goldfish are distinguished from suckers (*especially the river carpsucker and the buffalos*) and from all other minnows by the saw-toothed spine in dorsal and anal fins; also, suckers do not have barbels.

HABITAT: Primarily lakes and reservoirs, where it seeks moderately warm water and shallows. Also rivers, where it prefers pools and backwaters. Congregates in areas of organic enrichment, such as sewage outfalls. Tolerates turbid water and low dissolved oxygen; avoids cold water and swift, rocky streams (*thus, usually not found in trout streams*).

ORIGIN: Native to Eurasia.
Introduced into Montana.



GOLDFISH

Carassius auratus

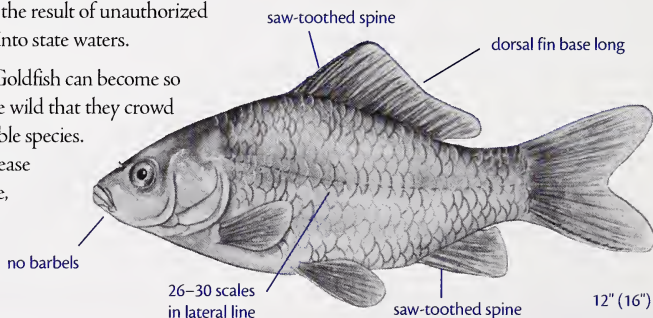
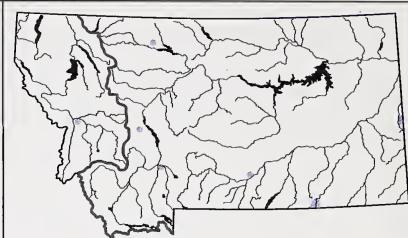
COLOR: Variable. Ranges from red, orange, black, white or any combination of these in cultured varieties to dark olive brown in individuals that have reverted to the wild.

SIMILAR SPECIES: See common carp.

HABITAT: Lakes and ponds with weedy shallows that are somewhat warm in summer.

ORIGIN: Native to eastern Asia. Montana populations are the result of unauthorized releases of pets into state waters.

COMMENT: Goldfish can become so numerous in the wild that they crowd out more desirable species. It is illegal to release them in any lake, pond, or stream in the state.



UTAH CHUB

Gila atraria

COLOR: Back olive brown to nearly black, occasionally bluish; sides usually brassy but sometimes silvery. Underside whitish or silver.

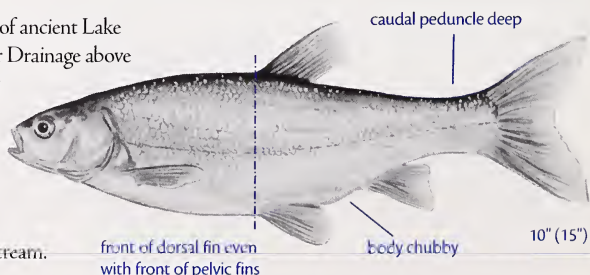
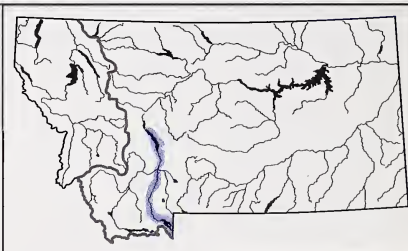
OTHER CHARACTERISTICS: No barbels.

SIMILAR SPECIES: (1) Other Montana chubs have barbels and a shallower caudal peduncle; also, adult size is smaller. (2) An immature fathead minnow can be distinguished from a small Utah chub by the former's rounded dorsal fin and dark vertical line at base of tail fin.

HABITAT: Lakes and streams. Prefers slow-moving or still water and areas with abundant aquatic vegetation.

ORIGIN: Native to waters of ancient Lake Bonneville and Snake River Drainage above Shoshone Falls. Apparently introduced into Hebgen Lake, Montana, in the early 1930s from a fisherman's bait bucket.

Has since dispersed downstream.



NORTHERN PIKEMINNOW

Ptychocheilus oregonensis

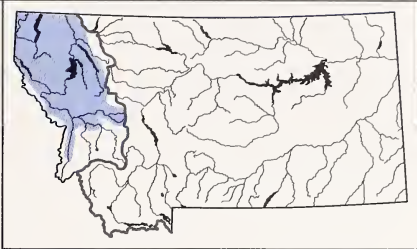
COLOR: Back dark greenish, silvery below. Young have prominent dark spot at base of tail fin.

OTHER CHARACTERISTICS: No barbels.

SIMILAR SPECIES: (1) A pikeminnow might be mistaken for a trout, but trouts have an adipose fin and teeth in the mouth. (2) Peamouth has a small mouth. (3) Flathead chub has barbels and longer, more pointed pectoral fins; it is not found in the same drainages as northern pikeminnow.

HABITAT: Typically lakes, but also slower currents of rivers and streams.

ORIGIN: Native to Montana.



PEAMOUTH

Mylocheilus caurinus

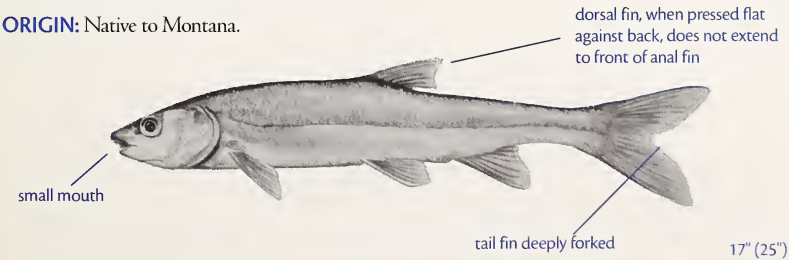
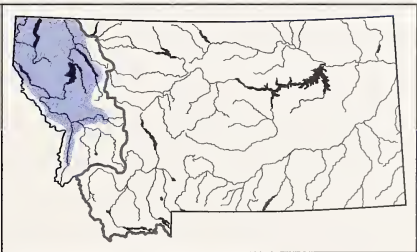
COLOR: Dark on back and silvery below; two dusky stripes along side; reddish at corners of mouth. Breeding fish have red midside stripe.

OTHER CHARACTERISTICS: Small barbel at each corner of mouth.

SIMILAR SPECIES: (1) See northern pikeminnow. (2) Adult lake chub is only half the size of adult peamouth, and mouth extends behind nostril in lake chub, but not in peamouth; also, it is not found in the same drainages as peamouth.

HABITAT: Lakes and streams, particularly weedy areas.

ORIGIN: Native to Montana.



REDSIDE SHINER

Richardsonius balteatus

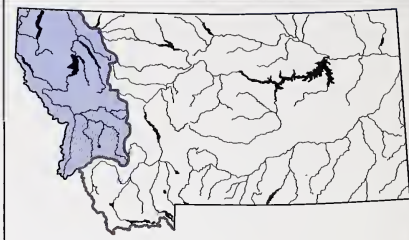
COLOR: Dark olive to brown on back; dark mid-side band from snout to tail fin with a narrow light stripe above it; lower sides silver with a reddish wash; underside silvery. Breeding fish highly colored; male has brilliant red and yellow on sides and belly, female is less striking.

OTHER CHARACTERISTICS: Body moderately deep and flat sided, front of dorsal fin well behind front of pelvic fins.

SIMILAR SPECIES: Golden shiner has a ridge on belly and golden coloration. In addition, range of the golden is east of the Continental Divide, while the redbside is almost exclusively west of the divide.

HABITAT: Lakes, ponds, and rivers.

ORIGIN: Native to Montana.



GOLDEN SHINER

Notemigonus crysoleucas

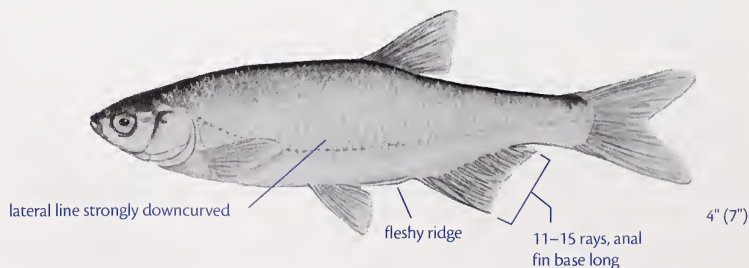
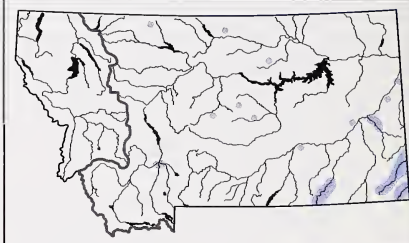
COLOR: Adults golden; color fades rapidly when removed from water. Young silvery with dusky midside band.

OTHER CHARACTERISTICS: Body deep and flat-sided, front of dorsal fin well behind front of pelvic fins. Head small and triangular.

SIMILAR SPECIES: See redbside shiner.

HABITAT: Weedy ponds, lakes, and slow-moving streams.

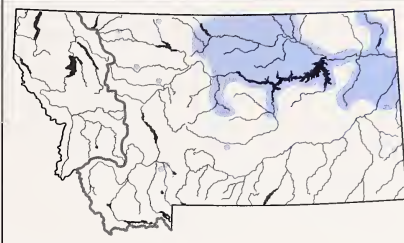
ORIGIN: Native to eastern North America as far west as the Dakotas and Texas, and from southern Canada to the Gulf States. Almost certainly introduced into Montana.



NORTHERN REDBELLY DACE

Phoxinus eos

COLOR: Olive to dark brown above; lower side and belly yellow or silvery except on adult males during summer when lower side is red. Side has two dark stripes with a light band between them; the upper stripe often breaks into spots toward tail. The lower stripe is broader and extends from snout to base of tail fin where it may end in a spot. These two lateral stripes are sometimes connected by a dark, oblique line or crossband.



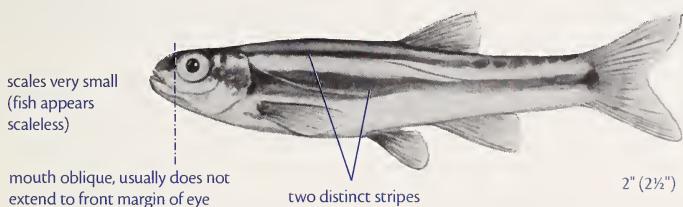
OTHER CHARACTERISTICS: Eye large. Body almost round in cross section. Front of dorsal fin behind front of pelvic fins. Lateral line incomplete and not distinct. No barbels.

SIMILAR SPECIES: (1) The hybrid of the northern redbelly dace and finescale dace has been found at 13 locations in the Missouri River Drainage. It is usually larger than the northern redbelly dace and has a larger mouth. Its midside stripe is less distinct, and its upper stripe is faint and usually broken. In practice, however, there is no sure, simple field technique for telling the hybrid from the northern redbelly dace. (2) The northern redbelly dace is distinguished from other small minnows by its two distinct stripes, one on midside and one on upper side, and smaller scales (see table on p. 33).

HABITAT: Clear, slow-flowing creeks, ponds, and lakes with aquatic vegetation, including filamentous algae.

ORIGIN: Native to Montana.

COMMENT: Although the northern redbelly dace is fairly common in Montana, the finescale dace has never been recorded for the state. The hybrid persists due to a unique reproductive strategy. Typically, hybrid females breed with redbelly dace males, but the male's genetic material is not incorporated during egg development and is not passed on to the next generation. The offspring are all female and clones of the mother (*that is, they are genetically identical to the mother*). Unisexuality is not common among vertebrates but has been found in amphibians and reptiles as well as in fishes. Due to its unusual form of genetic reproduction and rarity, the northern redbelly dace x finescale dace hybrid is a fish of special concern in Montana.



Hybrid of northern redbelly dace and finescale dace

mouth moderately oblique, usually
extends at least to front margin of eye



PEARL DACE

Margariscus margarita

COLOR: Back dark, sides dusky silver, underside white; scattered dark scales give some individuals a speckled appearance. Young have a dusky midline band that fades on large specimens but may be distinct on caudal peduncle. Breeding males are orange-red on the sides and below.

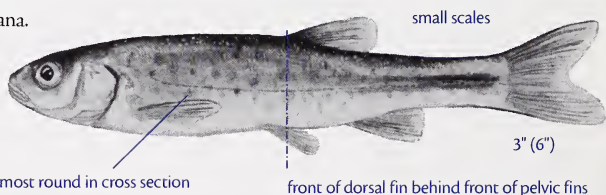
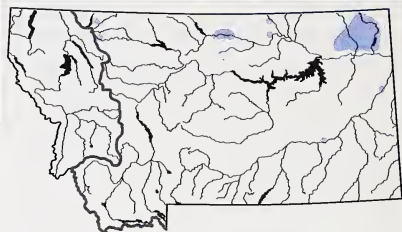
OTHER CHARACTERISTICS: A small, flaplike barbel is present in groove of upper lip just above each corner of mouth, sometimes absent from one or both sides. Lateral line usually complete.

SIMILAR SPECIES: (1) Although the pearl dace is easily confused with the lake chub, they can be distinguished by their barbels. The pearl dace has a small, flat barbel in groove of upper lip, noticeably above corner of mouth; the lake chub has a well-developed, rounded barbel, essentially at corner of mouth. (2) See creek chub.

HABITAT: Small, cool streams; some large rivers and lakes.

ORIGIN: Native to Montana.

COMMENT: Found in few Montana waters; therefore, a fish of special concern.



LONGNOSE DACE

Rhinichthys cataractae

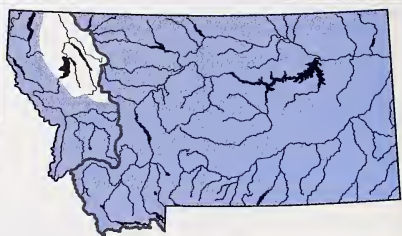
COLOR: Back olive to black, shading to white or yellow underneath. Sides may have dark blotches. Breeding males have reddish orange on head and fins. Juveniles have a black midside stripe starting at the tip of the snout and ending at the base of the tail fin. Adults often have a dark stripe ahead of eye.

OTHER CHARACTERISTICS: Small barbel at each corner of mouth.

SIMILAR SPECIES: (1) Could be confused with small suckers, from which it is distinguished by having barbels and by the more forward placement of anal fin (see text and illustrations on p. 16). (2) Sturgeon chub has silvery color, conspicuous barbel, and larger scales, many of which have keels.

HABITAT: Riffle areas of streams and rivers; to a lesser extent, lakes.

ORIGIN: Native to Montana.

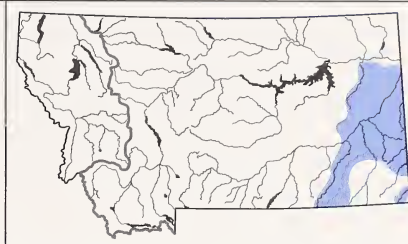


CREEK CHUB

Semotilus atromaculatus

OTHER NAME: Horned dace.

COLOR: Overall silvery, often with purple iridescence; back olive; underside white. Young have a prominent dark midside band extending from tip of snout to tail fin; band fades on older fish. Black spot at front of dorsal fin base vague or absent in immature specimens. Breeding males usually have a reddish cast.

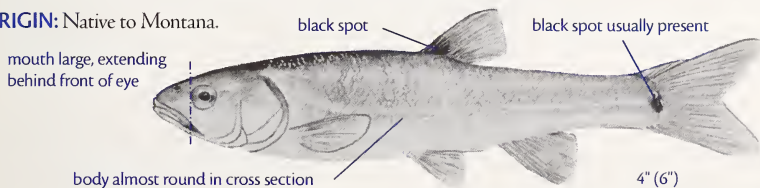


OTHER CHARACTERISTICS: A small, flaplike barbel is located in groove of upper lip just above each corner of mouth, sometimes absent. Breeding males have a few pronounced nuptial tubercles (horny projections) on head and smaller ones on body and pectoral fins.

SIMILAR SPECIES: No other Montana minnow has a distinct black spot on dorsal fin. (1) Pearl dace has a smaller mouth. (2) Lake chub has a smaller mouth and a rounded barbel. (3) A female or immature fathead minnow may suggest a small creek chub but has a smaller mouth and a dark vertical line at base of tail fin. (4) See spottail shiner.

HABITAT: Typically creeks. Less common in rivers and shallows of lakes.

ORIGIN: Native to Montana.



LAKE CHUB

Couesius plumbeus

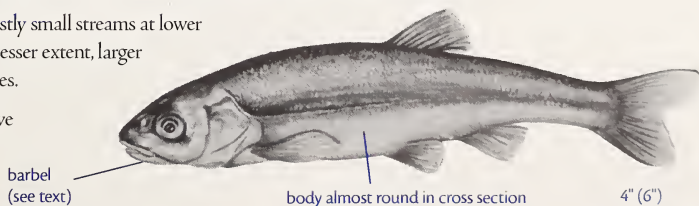
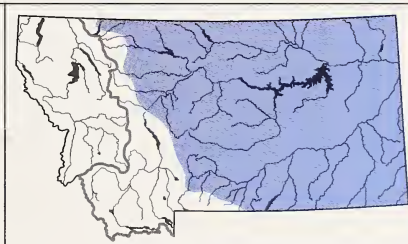
COLOR: Silver gray overall, dusky on back, underside whitish. A midside band is present but often indistinct. Scattered dark scales may be present, giving a speckled appearance. Breeding males develop reddish patches, particularly on the pectoral fin bases.

OTHER CHARACTERISTICS: A well-developed, rounded barbel is located slightly above each corner of the mouth.

SIMILAR SPECIES: See (1) creek chub, (2) pearl dace, and (3) peamouth.

HABITAT: Mostly small streams at lower elevations; to a lesser extent, larger streams and lakes.

ORIGIN: Native to Montana.



FLATHEAD CHUB

Platypharodon gracilis

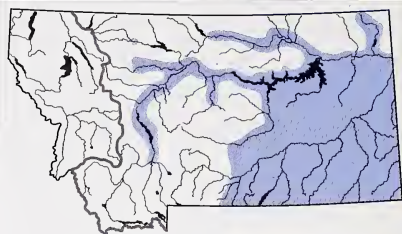
COLOR: Very silvery, shading to brown or dusky on back.

OTHER CHARACTERISTICS: Mouth large with a conspicuous barbel at each corner. Pectoral fin sickle shaped with a long, sharply pointed tip that may extend almost to front of pelvic fin.

SIMILAR SPECIES: See (1) sicklefin chub, (2) sturgeon chub, and (3) northern pikeminnow.

HABITAT: Mostly turbid rivers and streams.

ORIGIN: Native to Montana.



head wedge shaped,
flattened on top

snout projects slightly
beyond upper lip



front of dorsal fin usually
ahead of front of pelvic fins

5" (11")

SICKLEFIN CHUB

Macrhybopsis meeki

COLOR: Light brown on back and upper sides; silvery white below.

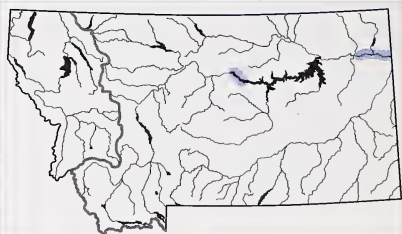
OTHER CHARACTERISTICS: Conspicuous barbel at each corner of mouth.

SIMILAR SPECIES: (1) Could be mistaken for a small flathead chub. Flathead can be told by wedge-shaped head profile and pointed snout; tip of its pectoral fin does not extend behind front of pelvic fin. (2) Sturgeon chub has keeled scales above lateral line, and its snout projects well beyond upper lip.

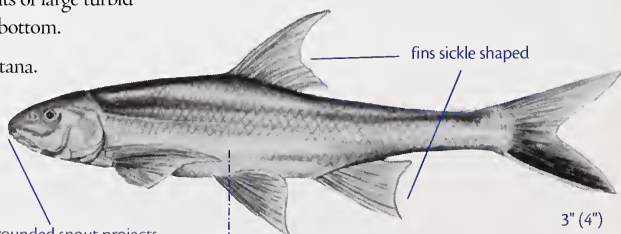
HABITAT: Strong currents of large turbid rivers over sand or gravel bottom.

ORIGIN: Native to Montana.

COMMENT: A fish of special concern due to its limited distribution in the state.



rounded snout projects
slightly beyond upper lip



tip of pectoral fin extends behind front of pelvic fin

3" (4")

STURGEON CHUB

Macrhybopsis gelida

COLOR: Back brownish, sides and underparts silvery to white.

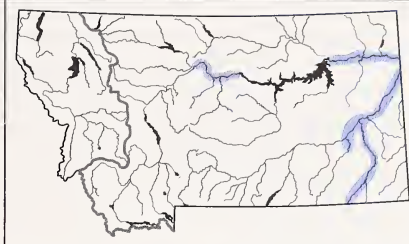
OTHER CHARACTERISTICS: Conspicuous barbel at each corner of mouth.

SIMILAR SPECIES: (1) Could be mistaken for a small flathead chub but can be recognized by its smaller, horizontal mouth overhung by the snout and keeled scales above lateral line. See (2) sicklefin chub, and (3) longnose dace.

HABITAT: Currents of turbid rivers over sand, gravel, or cobble.

ORIGIN: Native to Montana.

COMMENT: Uncommon in Montana; therefore, a fish of special concern.



most scales above lateral line have distinct keel (low ridge)



BRASSY MINNOW

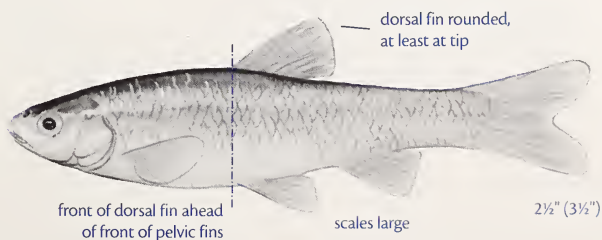
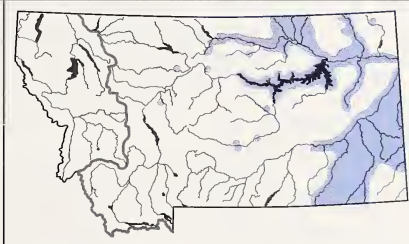
Hybognathus hankinsoni

COLOR: Back olive green to brown, sides yellowish or dull silver becoming brassy in adult, underside white. Dusky midside stripe usually present.

SIMILAR SPECIES: (1) Plains and western silvery minnows are very silvery (*brassy minnow is usually brassy or yellow*), and the dorsal fin is not rounded. (2) Fathead minnow has a drabber color, smaller scales, and an incomplete lateral line. (3) Sand shiner has paired spots on each lateral line scale.

HABITAT: Small to medium-sized prairie streams with clear to slightly turbid water and some vegetation, often found over sand and gravel bottom. Occasionally lakes.

ORIGIN: Native to Montana.



FATHEAD MINNOW

Pimephales promelas

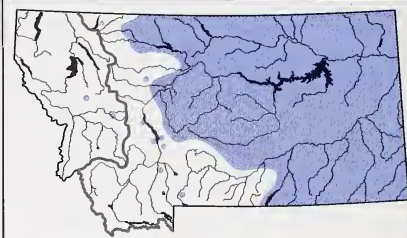
COLOR: Back dark olive or brown, sides dusky, pale below. Young are lighter and have a dark midside band. Breeding males nearly black with two light blotches.

OTHER CHARACTERISTICS: Body of adult is stout. Lateral line usually incomplete. Scales ahead of dorsal fin are small and crowded. First ray of dorsal fin is short, thick, and blunt—not easily seen on females and young.

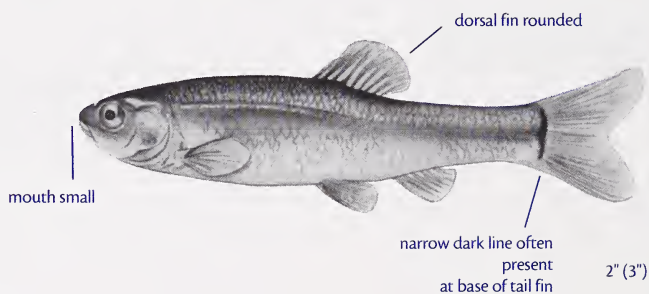
SIMILAR SPECIES: Immature fathead minnows may be confused with small individuals of other minnow species. A narrow, dark, vertical line at base of tail fin is a clue that a minnow is a fathead; however, other Montana minnows sometimes have a faint line at base of tail fin. See (1) sand shiner, (2) brassy minnow, (3) creek chub, and (4) Utah chub.

HABITAT: Ponds, shallow lakes, slow-flowing streams. Tolerates turbid water, high temperatures, and low dissolved oxygen.

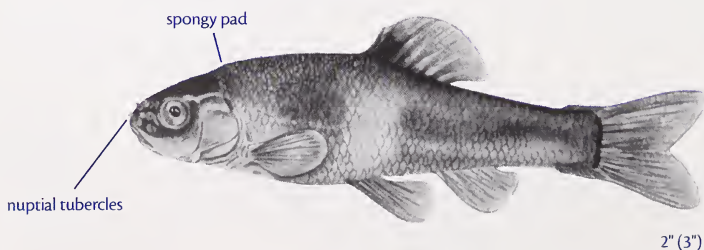
ORIGIN: Native to Montana.



Adult other than breeding male



Breeding male



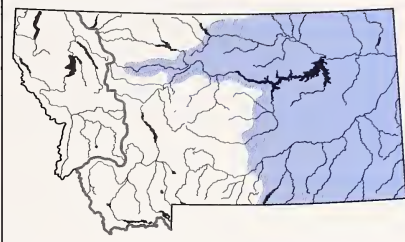
WESTERN SILVERY MINNOW

Hybognathus argyritis

PLAINS MINNOW

Hybognathus placitus

Because they are very similar, the plains minnow and western silvery minnow are treated together. The plains is more streamlined than the western silvery (see illustrations below). Also, the plains has 15 to 22 scales across the belly from lateral line to lateral line, compared with the western silvery's 11 to 17. Nevertheless, there is no sure method for telling live specimens apart. Dead specimens can be identified by inspecting a bone at the base of the skull and the muscles attached to it. These features are clearly illustrated in William L. Pflieger's, *The Fishes of Missouri*, Missouri Department of Conservation, 1975, pp. 107–108; or 1991 revision, pp. 107–108.



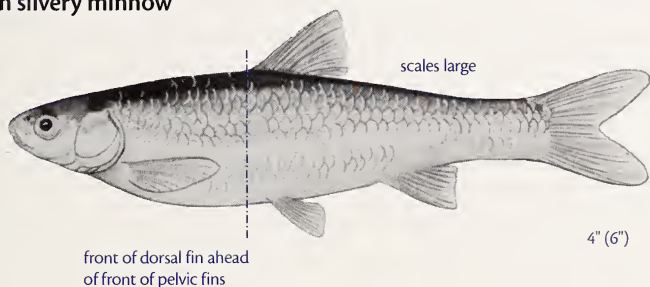
COLOR: Overall very silvery; back dusky or yellowish olive, underside white.

SIMILAR SPECIES: (1) Sand shiner has paired dashes on each lateral line scale. See (2) brassy minnow and (3) emerald shiner.

HABITAT: Slower portions of medium-sized to large streams. Sometimes found in creeks and impoundments.

ORIGIN: Both species are native to Montana.

Western silvery minnow



Outline of plains minnow



EMERALD SHINER

Notropis atherinoides

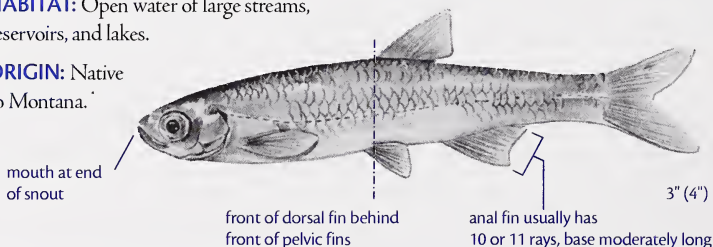
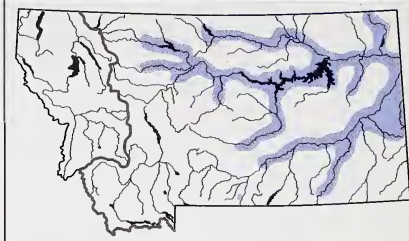
COLOR: Overall silvery with iridescent light green back. Usually has an emerald green or silvery mid-side stripe, particularly toward the rear. Young are somewhat translucent.

OTHER CHARACTERISTICS: Eye large. Body slender and flat sided, fragile looking. Scales easily rubbed off.

SIMILAR SPECIES: In brassy, plains, and western silvery minnows, front of dorsal fin is ahead of front of pelvic fins, and snout slightly overhangs mouth.

HABITAT: Open water of large streams, reservoirs, and lakes.

ORIGIN: Native to Montana.



SPOTTAIL SHINER

Notropis hudsonius

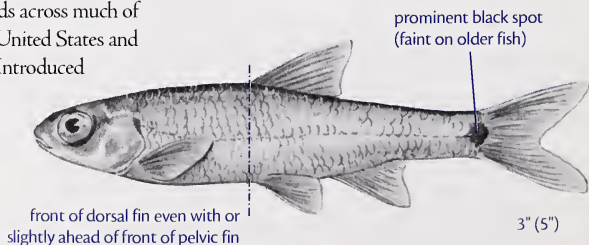
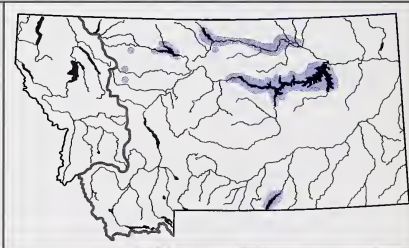
COLOR: Overall silvery with pale green to olive back. Lower edge of tail fin may be whitish.

OTHER CHARACTERISTICS: Eye large, body flat sided.

SIMILAR SPECIES: The creek chub, like the spottail shiner, has a spot at base of tail fin but also has one at front of dorsal fin base. It almost always has barbels (*the Spottail has none*). The creek chub is a larger minnow, but individuals that are spottail shiner sized have a dark midside band, which may extend to tip of snout.

HABITAT: Large, clear rivers and lakes over firm bottom of sand, gravel, and rubble where vegetation is scanty or lacking. Avoids strong currents.

ORIGIN: Native range extends across much of Canada, dipping into central United States and down the Eastern Seaboard. Introduced into Montana as forage for game fishes in 1982.



SAND SHINER

Notropis stramineus

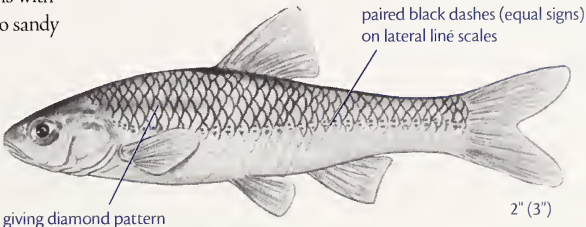
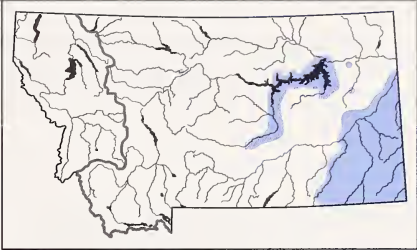
COLOR: Back light olive, sides silvery (sometimes with bluish purple sheen), underside white. A thin black stripe along midline of back expands into a wedge at front of dorsal fin. Black dashes on lateral line scales may be faint on fish from turbid water.

OTHER CHARACTERISTICS: Eye large. Body somewhat flat sided but not deep.

SIMILAR SPECIES: Paired dashes on lateral line scales distinguish sand shiner from other Montana minnows.

HABITAT: Mainly streams with sand or gravel bottom; also sandy shallows of lakes.

ORIGIN: Native to Montana.



MINNOW LATERAL LINE SCALE COUNTS AND BARBEL CHARACTERISTICS

Species	Lateral line scale count ¹	Barbels
Goldfish	26–30	None.
Brassy minnow	32–39	None.
Sand shiner	32–39	None.
Plains minnow	33–41	None.
Western silvery minnow	34–41	None.
Common carp	35–39	Two on each side of upper jaw, conspicuous.
Emerald shiner	35–41	None.
Spottail shiner	36–42	None.
Sturgeon chub	37–46	One at each corner of mouth, conspicuous.
Fathead minnow	40–50 ²	None.
Flathead chub	42–59	One at each corner of mouth, conspicuous.
Golden shiner	44–54	None.
Sicklefin chub	45–50	One at each corner of mouth, conspicuous.
Utah chub	45–65	None.
Creek chub	52–64	One in upper lip groove just ahead of each corner of mouth, small and flaplike. Sometimes absent.
Reside shiner	52–67	None.
Lake chub	54–70	One slightly above each corner of mouth, rounded, well developed.
Longnose dace	58–73	One at each corner of mouth, small.
Pearl dace	61–78	Same as creek chub (above). Sometimes absent from one or both sides.
Northern pikeminnow	68–77	None.
Peamouth	68–79	One at each corner of mouth, small.
Northern redbelly dace	75–90 ²	None.

¹ When identifying minnows a quick approximate count of the lateral line scales will often narrow the field of candidates. For counting procedure see "How to count scales in the lateral line" on p. 6.

² Scales should be counted along midside, as lateral line is incomplete.

MUDMINNOW FAMILY

Umbridae

Mudminnows are small, robust fishes with soft-rayed fins. The dorsal fin is set well back toward the tail, and the tail fin is rounded. The one Montana species has a black bar at the base of the tail fin.

CENTRAL MUDMINNOW

Umbra lima

COLOR: Overall dark colored; olive brown to brown-black above, sides mottled with dark brown or may have as many as 14 irregular dark vertical bars. Underside white to yellowish.

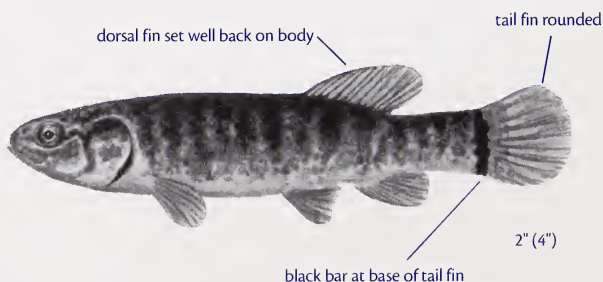
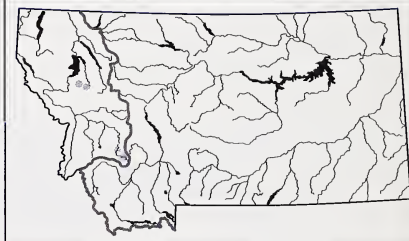
OTHER CHARACTERISTICS: Head broad, lateral line absent. Male's anal fin long, almost reaches base of tail fin; female's anal fin does not reach base of tail fin.

SIMILAR SPECIES: (1) Plains killifish is lighter colored and mouth is tilted upward. (2) Montana members of the livebearer family do not have a black bar at base of tail fin. (3) In members of minnow family, dorsal fin is located farther forward on body.

HABITAT: Small ponds, slow-moving streams, and marshes. Usually associated with vegetation, organic debris, and mud.

ORIGIN: Unauthorized introductions into Montana. Native to central North America west of Appalachian Mountains to the Dakotas, and from southern Canada to northern Arkansas.

COMMENT: Very hardy. Can withstand water temperature extremes and comparatively high acidity. When oxygen in water insufficient, can gulp air at surface and use atmospheric oxygen. Therefore, tolerates stagnant conditions. First Montana record was in 1990 from Blacktail Creek within the Butte city limits.



KILLIFISH FAMILY

Cyprinodontidae

Killifishes are small fishes with an upturned mouth, a projecting lower lip adapted for surface feeding, and a slightly rounded or squarish tail fin. The one Montana species is boldly marked with vertical bars.

PLAINS KILLIFISH

Fundulus zebrinus

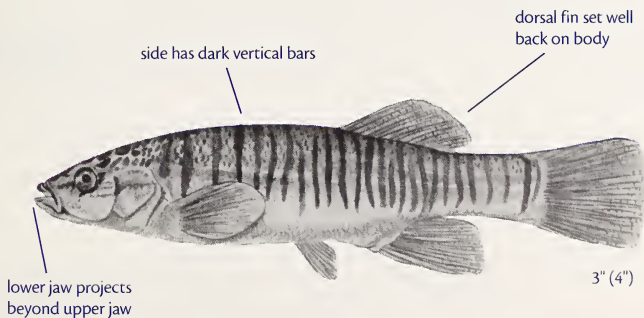
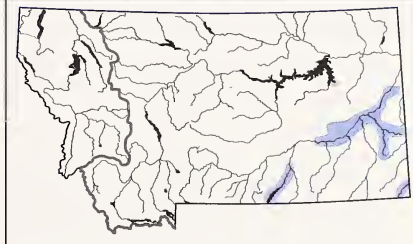
COLOR: Olive brown on back, fading to pale yellow or white below. Side has 12 to 28 dark vertical bars (*bars on female are narrower and more numerous, as in illustration below*).

OTHER CHARACTERISTICS: Head broad and flat, lateral line absent.

SIMILAR SPECIES: Montana members of (1) livebearer family and (2) minnow family do not have vertical bars on sides. (3) See Central Mudminnow.

HABITAT: Shallow streams with sand or gravel bottom, comparatively high alkalinity or salinity, and few other fishes.

ORIGIN: Not native to Montana. Natural range is from Platte River Drainage of Nebraska, Wyoming, and Colorado southward to Brazos and Colorado rivers in Texas and Pecos River in New Mexico and Texas. Apparently was introduced into the Big Horn River in Wyoming, moved downstream into Montana, dispersed through the lower Yellowstone River Drainage, and was spread further by bait buckets.



LIVEBEARER FAMILY

Poeciliidae

These are small fishes with mouth upturned for surface feeding. The lateral line is absent. The male's anal fin is placed forward and modified into a gonopodium, a slender structure for transferring sperm to the female. The eggs hatch internally and young emerge as free-swimming individuals.

WESTERN MOSQUITOFISH

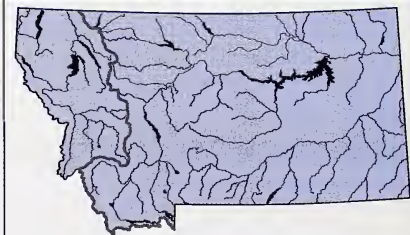
Gambusia affinis

COLOR: Light olive to dull silver.

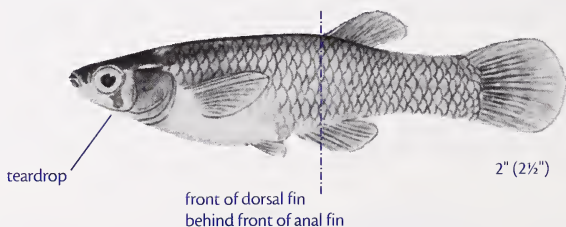
SIMILAR SPECIES: Other livebearers in Montana waters are more colorful and do not have teardrop marking; also, dorsal fin is not placed as far back on body (*on female front of dorsal fin is ahead of front of anal fin*).

DISTRIBUTION AND HABITAT: Widely stocked in shallow waters across the state each year for mosquito control. Avidly eats mosquito larvae, which live just below water surface. Can survive winter only in ponds or runs from thermal springs.

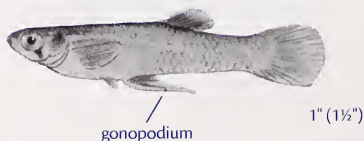
ORIGIN: Not native to Montana. Occurs naturally from southern Illinois and Indiana southward to the Gulf States and Mexico. Also along the Atlantic Coast from New Jersey to Florida.



Female



Male



TROPICAL AQUARIUM FISHES

The following livebearers are illegally released pet fishes and their progeny. None is native to Montana. Their native ranges are in southeastern United States, Mexico, and Central America. All are small—none found was larger than 3½ inches. As of this writing four species are known to be established in a few warm spring streams and ponds in the western third of the state. Many, males in particular, can be identified using the pictures and color descriptions below. Females of the different species are often difficult to tell apart. Their association with males will give clues. Crossbreeding has created new varieties and color combinations that further confuse identification.

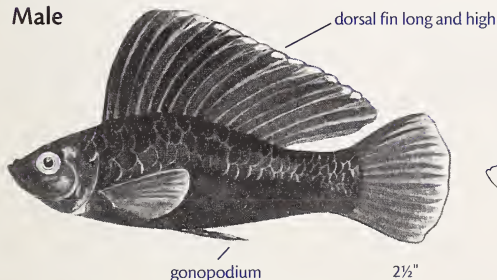
SAILFIN MOLLY

Poecilia latipinna

COLOR: Two varieties. Black variety (*shown in illustration*) is solid black. Green variety has olive back shading to silvery sides with six to eight rows of black dots and white underside.

COMMENT: Only the black variety has been verified for Montana waters. Specimens were taken from a warm spring at Beaverhead Rock in Madison County.

Male



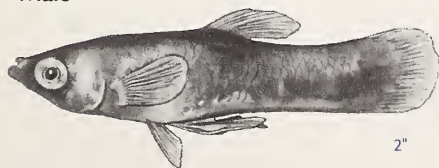
Outline of female

SHORTFIN MOLLY

Poecilia mexicana

COLOR: Specimens from Montana waters have been nearly all black or heavily blotched with black on body and fins. Some have orange on tail fin.

Male



Outline of female

VARIABLE PLATYFISH

Xiphophorus variatus

COLOR: Variable. However, a livebearer in Montana waters with an orange-red tail fin and a golden dorsal fin is almost certain to be a variable platyfish. The body is typically moss green.

COMMENT: Hybrids are common where this species occurs with the green swordtail. Male hybrids have a short sword.

Male



Outline
of female



GREEN SWORDTAIL

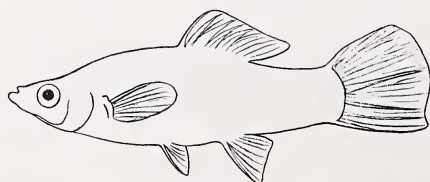
Xiphophorus helleri

COLOR: Most are solid reddish orange; some are reddish orange with black fins or reddish orange with black mottling. Swordlike tail fin usually has black edges. The classical green variety with red and yellow stripes on sides is rare in Montana waters.

Male



Outline
of female



SMELT FAMILY

Osmeridae

Smelts are small, slender, silvery fishes with an adipose fin and no pelvic axillary process. There is only one species in Montana.

RAINBOW SMELT

Osmerus mordax

COLOR: Silvery with pink and purple iridescence, greenish on back.

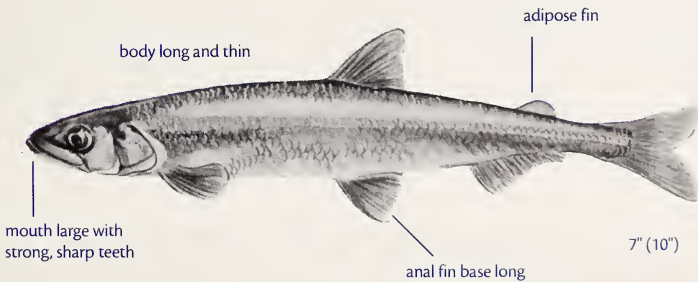
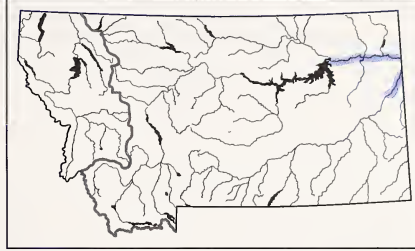
OTHER CHARACTERISTICS: Scales thin and easily rubbed off. Spawning males feel like sandpaper due to numerous small nuptial tubercles on head, body, and fins.

SIMILAR SPECIES: (1) Members of trout family have an axillary process at base of each pelvic fin. (2) See trout-perch.

HABITAT: For landlocked rainbow smelt, large coolwater lakes. Adults ascend streams to spawn.

ORIGIN: Original range is off Atlantic Coast, with adults ascending streams to spawn. Naturally landlocked in many inland waters in northeastern North America. Has come upstream into Montana from Lake Sakakawea (created by Garrison Dam) in North Dakota, where it was introduced.

COMMENT: Smelt have a strong fishy odor. This may account for their name.



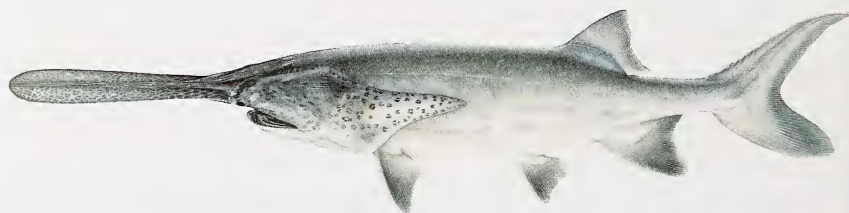
COLOR ILLUSTRATIONS OF GAME AND SPORT FISHES

The first length given is a typical adult size for the species; the second (*in parentheses*) is the usual Montana maximum length.



Shovelnose Sturgeon

32" (41") see page 11



Paddlefish

37" (77") see page 12



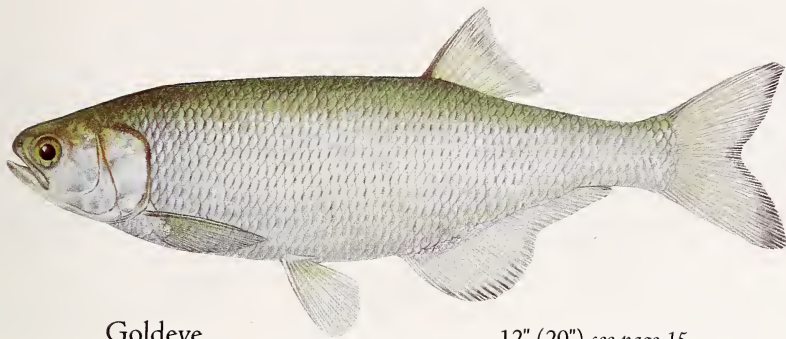
Northern Pike

20" (45") see page 14



Burbot

20" (39") see page 66



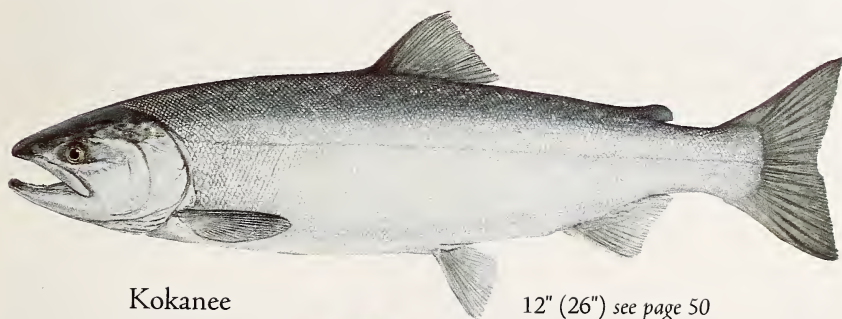
Goldeye

12" (20") see page 15



Chinook Salmon

24" (38") see page 49



Kokanee

12" (26") see page 50

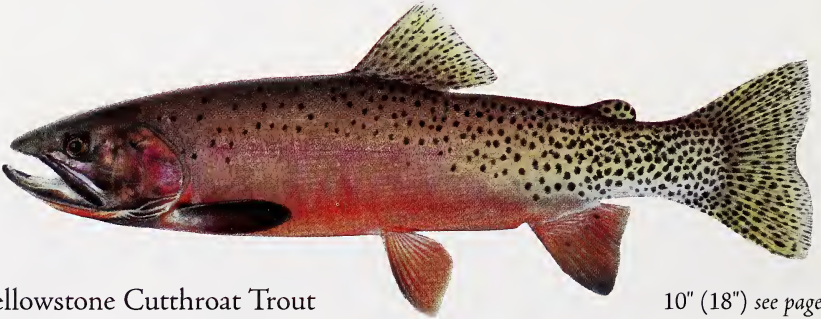


breeding male



Golden Trout

10" (22") see page 54



Yellowstone Cutthroat Trout

10" (18") see page 53



Westslope Cutthroat Trout

10" (18") see page 52



Rainbow Trout

12" (35") see page 51



Brown Trout

13" (35") see page 55



Bull Trout

small tributaries: 11"

large rivers and lakes: 24" (37") see page 57



Lake Trout

22" (47") see page 58



Brook Trout

9" (16") see page 56



Arctic Grayling

10" (20") see page 59



Mountain Whitefish

12" (23") see page 60



Channel Catfish

17" (37") see page 64



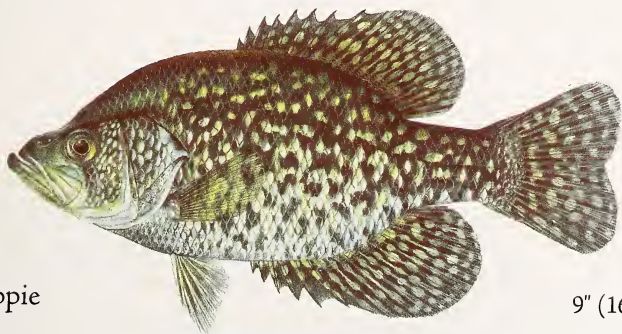
Black Bullhead

7" (15") see page 65



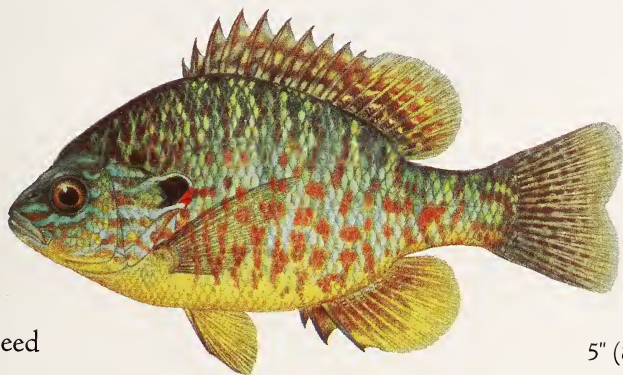
White Crappie

9" (16") *see page 68*



Black Crappie

9" (16") *see page 69*



Pumpkinseed

5" (8") *see page 70*



Bluegill

6" (12") *see page 71*



Green Sunfish

5" (8") see page 72



Rock Bass

6" (8") see page 73



Yellow Perch

8" (15") see page 81



Smallmouth Bass

11" (19") *see page 74*



Largemouth Bass

11" (21") *see page 75*



Walleye

16" (33") *see page 82*



Sauger

13" (28") *see page 82*

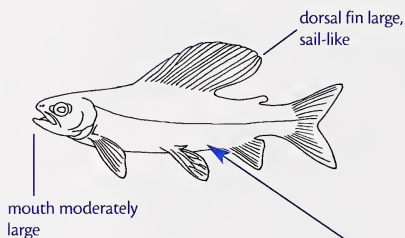
TROUT FAMILY

Salmonidae

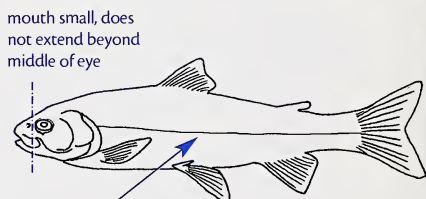
Montana members of this family are Pacific salmon, trouts (including chars), whitefishes, and arctic grayling. All have an adipose fin and pelvic axillary processes; the young of most species have parr marks. Colors may vary with habitat, season, and sex.

COMPARISON OF ARCTIC GRAYLING, WHITEFISHES, PACIFIC SALMONS, TROUTS, AND CHARS

Arctic grayling

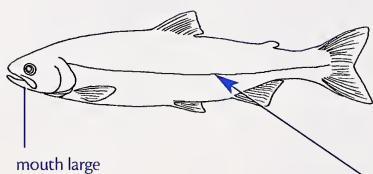


Whitefishes

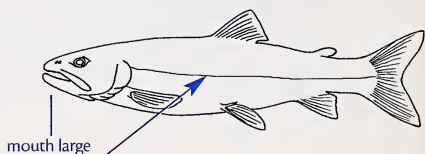


Scales larger, fewer than 110 scales in lateral line

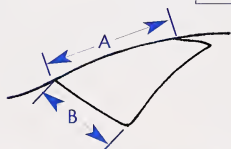
Pacific salmon



Trouts including chars
(see p. 87)



Scales smaller, 110 or more scales in lateral line



anal fin has 13 or more rays, and its base is longer than fin is deep (A is greater than B)



anal fin has 12 or fewer rays, and its base is shorter than fin is deep (A is less than B)

CHINOOK SALMON

Oncorhynchus tshawytscha

OTHER NAME: King salmon.

COLOR: See p. 41.

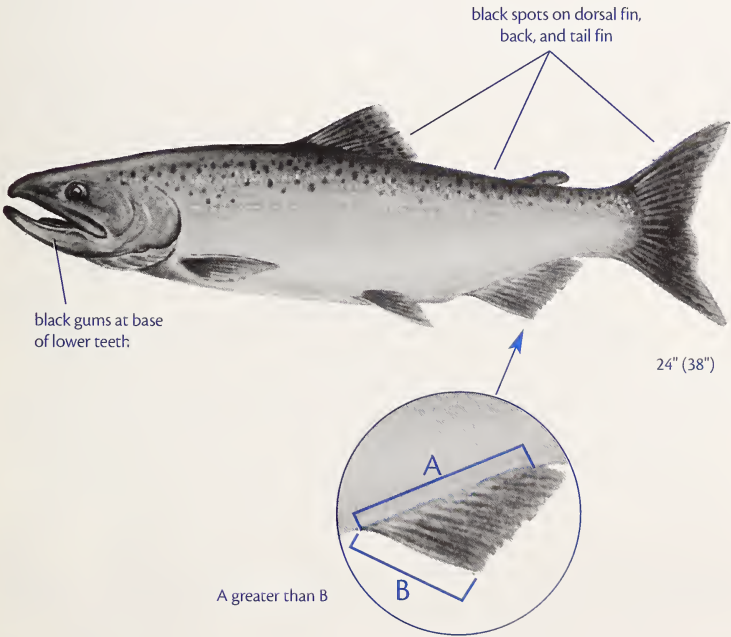
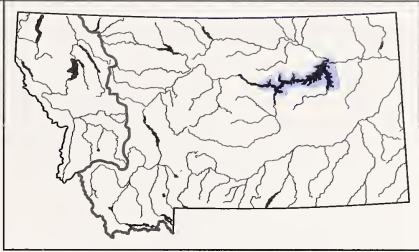
OTHER CHARACTERISTICS: Anal fin usually has 14 to 19 rays; its base is longer than base of dorsal fin. Has 26 or fewer gill rakers on first arch. Breeding males develop an elongated, hooked snout and enlarged teeth. Females change little. Breeding fish of both sexes darken in color, males more than females.

SIMILAR SPECIES: (1) Trouts have 12 or fewer rays in anal fin (*it is deeper than long*).
(2) See kokanee.

HABITAT: Landlocked chinook salmon live in large, deep lakes and spawn in tributary streams. The young may stay in the stream for a year or two before migrating downstream to the lake. There are no reproducing populations in Montana.

ORIGIN: Introduced into Montana. Natural range is Pacific Ocean and its tributaries. Adults ascend streams of western North America and northeastern Asia to spawn.

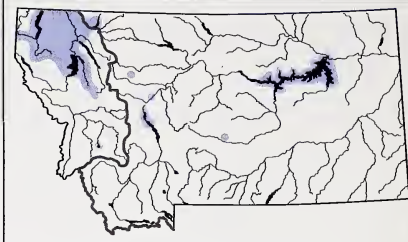
COMMENT: In recent years chinook salmon, bred to spend their entire lives in fresh water, have been stocked in Fort Peck Reservoir.



OTHER NAMES: Kokanee salmon, blueback, silver.

The darker fish below is a breeding male. When younger he looked like the upper fish. In maturing he had a striking color change and he developed an elongated, hooked snout, enlarged teeth, a small hump behind the head, and embedded scales.

A breeding female changes less dramatically. Her color ranges from dark gray with dark green back to dull red with dark red on the back.



COLOR: See p. 41.

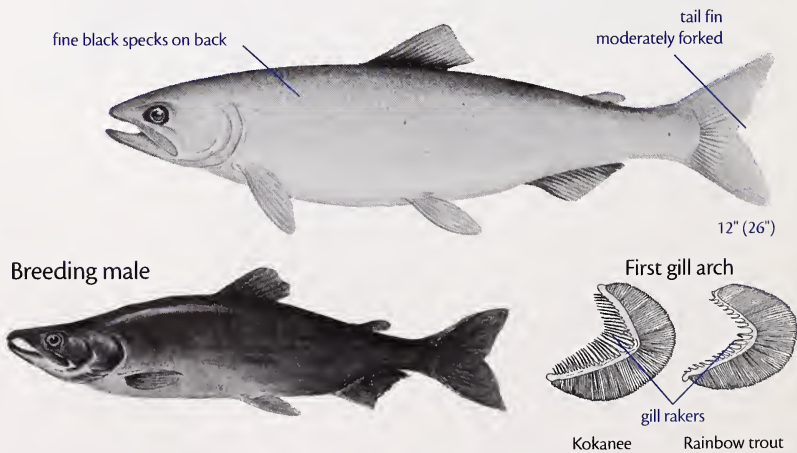
OTHER CHARACTERISTICS: Anal fin has 13 to 17 rays; its base is longer than base of dorsal fin. Has 29 to 40 gill rakers on first arch.

SIMILAR SPECIES: (1) Silver-colored rainbow trout are often mislabeled kokanee. The anal fin base of rainbow and other trouts is shorter than the fin is deep; the kokanee's anal fin base is longer than the fin is deep (see illustrations at bottom of p. 48). Trouts have 26 or fewer gill rakers on first arch; the kokanee has 29 or more and these are longer, thinner, and more crowded (see illustrations below). (2) Chinook salmon has black spots on back, dorsal fin, and tail fin, and 26 or fewer gill rakers on first arch (*these are stouter and more widely spaced than the kokanee's*).

HABITAT: Clear, cold lakes and reservoirs. Adults generally ascend streams to spawn, but also spawn in gravel and rocky shorelines of lakes with groundwater upwellings.

ORIGIN: Possibly native in Kootenai River Drainage. Introduced elsewhere in Montana. Original range of kokanee is lakes on the Pacific slope in Alaska, Yukon Territory, British Columbia, Washington, Idaho, and Oregon. Also occurs naturally in Japan and northeast Asia.

COMMENT: The kokanee is a landlocked sockeye salmon—a Pacific salmon. Both sexes die after spawning. Kokanee travel in schools and the growth of individual fish depends on population density. High density results in undesirably small fish due to intense competition for food.



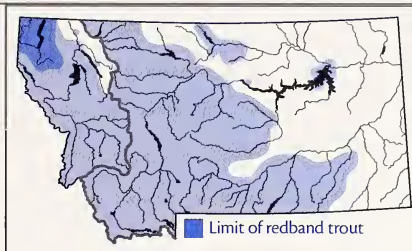
RAINBOW TROUT

REDBAND TROUT

Oncorhynchus mykiss

Oncorhynchus mykiss subspecies

The redband trout is regarded as a subspecies within the "rainbow trout group"; however, it has not yet been officially classified by fisheries scientists. Since it and the rainbow trout are similar in appearance they are here treated together. In Montana, populations of native redband trout (*they are also referred to as inland or interior rainbow trout*) occur only in a few waters of the Kootenai River Drainage. It is a fish of special concern.



OTHER NAMES: Silver (*a rainbow trout with silvery iridescence is sometimes miscalled a silver salmon*). Kamloops and steelhead are strains of rainbow trout.

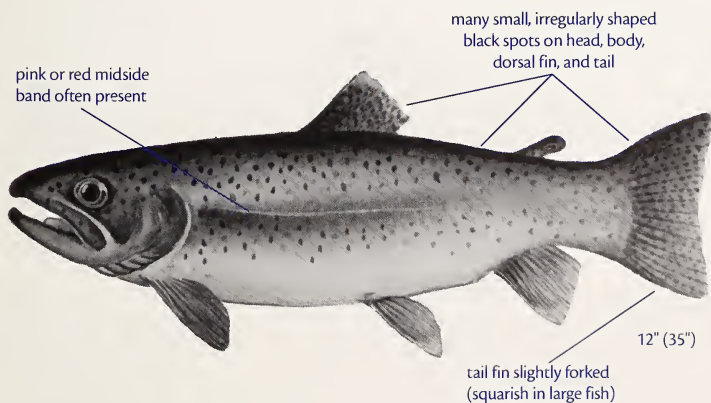
COLOR: The painting on p. 42 and the illustration below typify a rainbow from a clear stream. Individuals living in large or turbid lakes or under ice tend to be iridescent silver.

OTHER CHARACTERISTICS: The redband trout has larger spots and usually a darker background color than the rainbow trout. The redband also has faint cutthroat slashes, may have red-orange hues on the body, and parr marks may persist in adults. However, there is no simple field technique for separating redband trout from rainbow trout.

SIMILAR SPECIES: (1) Westslope cutthroat trout and (2) Yellowstone cutthroat trout have distinct red to orange cutthroat slashes and spots concentrated toward the rear with few or none on the snout; they also usually have tiny teeth behind the "tongue." Crosses between the cutthroat subspecies and rainbow trout are common. Genetic analysis is required for positive identification. See (3) golden trout, (4) brown trout, and (5) kokanee.

HABITAT: Clear, cool streams and lakes.

ORIGIN: The principal native range of rainbow trout is in western North America with a small portion in northeastern Asia. Except for the redband trout subspecies, all rainbow trout populations in Montana originated from hatchery fish.



WESTSLOPE CUTTHROAT TROUT

Oncorhynchus clarki lewisi

(A subspecies of cutthroat trout)

MONTANA STATE FISH

(shares this title with Yellowstone cutthroat trout).

OTHER NAMES: Flat, native, blackspotted cutthroat trout, redbelly, mountain trout, Upper Missouri cutthroat trout.

COLOR: See p. 42.

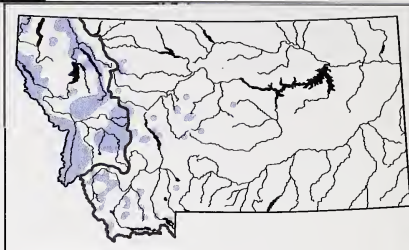
OTHER CHARACTERISTICS: Tiny teeth usually present on floor of mouth behind "tongue." These are embedded in tissue and difficult to see but may be felt if brushed with the side of a needle. Lower sides red during spawning season.

SIMILAR SPECIES: (1) Yellowstone cutthroat trout typically has yellow-brown hues, whereas westslope is usually silvery steel gray with olive tints on back shading to white underneath. Yellowstone has fewer, larger, and rounder black spots that extend to the lower side. (2) Distinguishing rainbow trout from westslope cutthroat is difficult since both are silvery with irregularly shaped spots (*the rainbow's are more evenly distributed*), both may have a pinkish midside band (*usually a rainbow characteristic*), and some rainbows have a faint yellow to reddish cutthroat slash on each side under the jaw. Crosses between rainbow trout and cutthroat are common. Genetic analysis is required for positive identification. See (3) golden trout and (4) brown trout.

HABITAT: Clear, cold streams and lakes.

ORIGIN: Native to Montana west of the Continental Divide and in some drainages east of the divide where it is referred to as Upper Missouri cutthroat trout.

COMMENT: Displaced from much of its original range and designated a fish of special concern. Montana Fish, Wildlife & Parks maintains a hatchery brood stock.



Distribution of pure-strain westslope cutthroat trout—in Missouri River Basin mostly in high-elevation tributary streams

small, irregularly shaped black spots,
few or none on snout

red or orange
cutthroat slash—
one on each side
(weak on juveniles)

no spots, or very few,
on lower side

spots more dense
toward rear of fish

10" (18")



YELLOWSTONE CUTTHROAT TROUT

Oncorhynchus clarki bouvieri

(A subspecies of cutthroat trout)

MONTANA STATE FISH

(shares this title with westslope cutthroat trout).

OTHER NAMES: Native, blackspotted cutthroat trout, blackspotted trout.

COLOR: See p. 42.

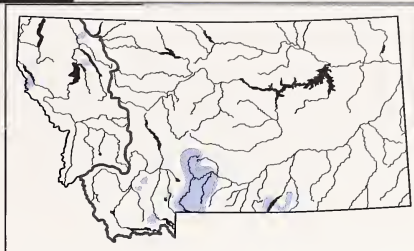
OTHER CHARACTERISTICS: Tiny teeth usually present on floor of mouth behind "tongue." These are embedded in tissue and difficult to see but may be felt if brushed with the side of a needle. Red on side of head and gill cover becomes intense in breeding male.

SIMILAR SPECIES: (1) Rainbow trout is silvery and usually profusely covered with small, irregularly shaped black spots, whereas the Yellowstone cutthroat often has a yellow-brown background color and larger, rounder spots concentrated toward the tail. The adult Yellowstone's distinct red or orange cutthroat slash is the most dependable feature for distinguishing it from rainbow trout or hybrids in the field. Genetic testing is needed for positive identification. See (2) westslope cutthroat trout, (3) golden trout, and (4) brown trout.

HABITAT: Clear, cold lakes and streams.

ORIGIN: Native to Montana in Yellowstone River Drainage from Tongue River upstream. Widely distributed due to stocking with hatchery fish.

COMMENT: Because of a continual, significant decline in natural populations, the Yellowstone cutthroat trout is designated a fish of special concern. Montana Fish, Wildlife & Parks maintains a brood stock.



Distribution of pure-strain Yellowstone cutthroat trout

medium-large, rounded black spots, few or none on snout

spots more dense toward rear of fish

red or orange cutthroat slash—one on each side (weak on juveniles)



10" (18")

COLOR: See p. 42.

SIMILAR SPECIES: (1) Rainbow trout is densely covered with irregularly shaped black spots and usually has 160 or fewer scales in lateral line.

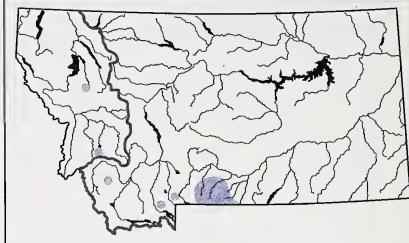
(2) cutthroat trout has cutthroat slashes, usually has at least a few small teeth behind "tongue," and pelvic and anal fins do not have white tips. (3)

Hybrid golden trout (*golden trout crossed with rainbow trout or cutthroat trout*) are found in a number of mountain lakes. Positive identification can be made only by genetic analysis.

HABITAT: In Montana, alpine lakes; also successful in clear, cool lakes at lower elevations.

ORIGIN: Introduced into Montana. Native only to the upper Kern River Basin in California.

COMMENT: Pure-strain golden trout are present in about 20 mountain lakes or mountain lake chains in western and south-central Montana. This species is considered by many to be the most beautiful of North American trouts.



black spots scattered across upper body

numerous spots on dorsal fin, caudal peduncle, and tail fin

10-12 parr marks (may persist in adults)

usually more than 170 scales in lateral line

white fin tips

10" (22")



BROWN TROUT

Salmo trutta

OTHER NAMES: Loch Leven trout, German brown (Von Behr) trout.

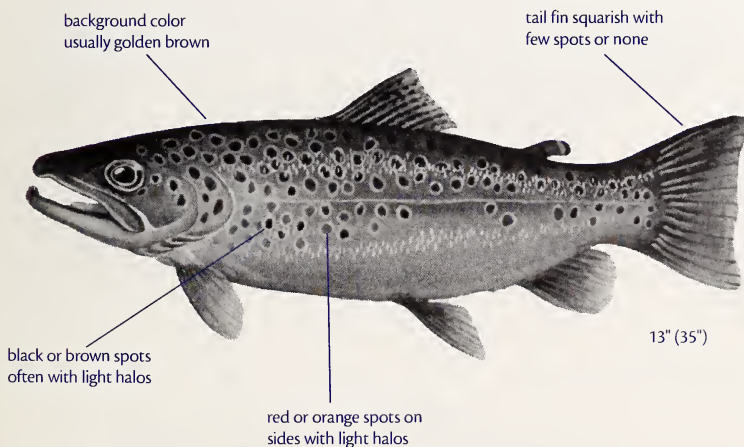
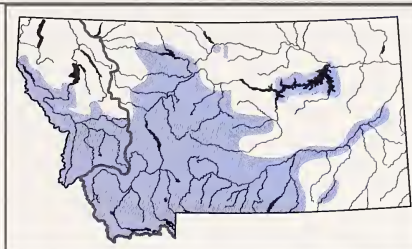
COLOR: See p. 43.

OTHER CHARACTERISTICS: May lack red and orange spots. Black (or brown) spots may be irregularly shaped or rounded. Spots with halos on gill cover are a clue (if present) that a trout is a brown trout. Fish living in large or turbid lakes or under ice acquire a silvery iridescence that often hides most of the spotting.

SIMILAR SPECIES: (1) Brook trout has wavy lines on back and intense white edge on anal fin and paired fins. (2) Rainbow trout and (3) cutthroat trout have many spots in rows on tail fin and do not have red spots or halos around spots.

HABITAT: Valley streams and rivers; also lakes and reservoirs with suitable spawning tributaries.

ORIGIN: Native to Europe and western Asia; introduced into Montana. The Von Behr and Loch Leven are varieties of brown trout brought from Germany and Scotland, respectively. They are now irretrievably mixed.



BROOK TROUT

Salvelinus fontinalis

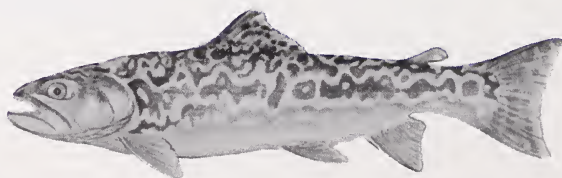
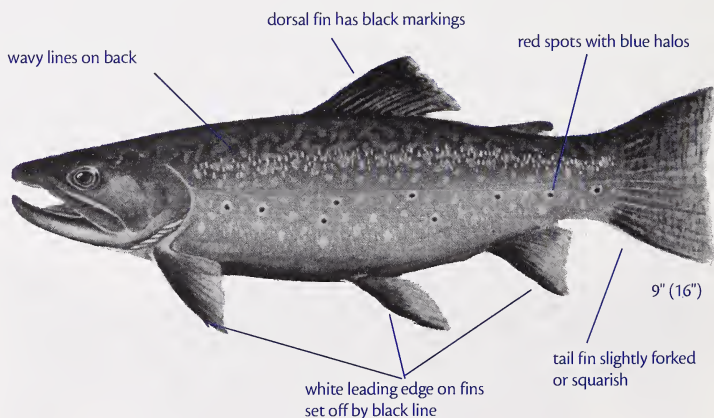
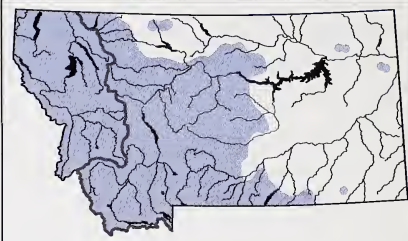
OTHER NAMES: Eastern brook trout, squaretail.

COLOR: See p. 43.

SIMILAR SPECIES: See (1) bull trout, (2) lake trout, and (3) brown trout. (4) Brook trout occasionally hybridize with brown trout. The offspring, called tiger trout, have the markings of a tiger or giraffe. They are very rare since mortality of eggs and newly hatched fish is high and hybrids reaching adulthood are usually sterile.

HABITAT: Clear, cold, well-oxygenated streams and lakes. Prefers small, spring-fed streams and ponds with aquatic vegetation. Often overpopulates, resulting in fish too small to attract fishermen.

ORIGIN: Introduced into Montana. Native in northeastern North America to west side of Hudson Bay and Minnesota, and in the Appalachian Mountains south to Georgia.



Tiger Trout

BULL TROUT

Salvelinus confluentus

OTHER NAME: Called Dolly Varden until 1978 when the primarily inland form of Dolly Varden was designated a separate species, the bull trout.

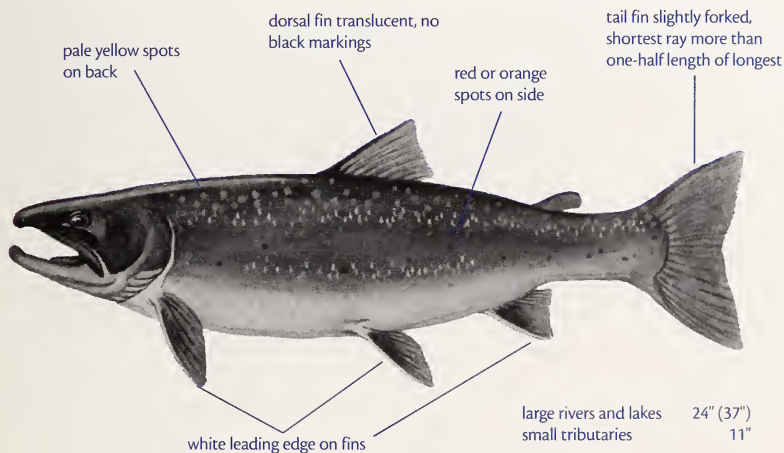
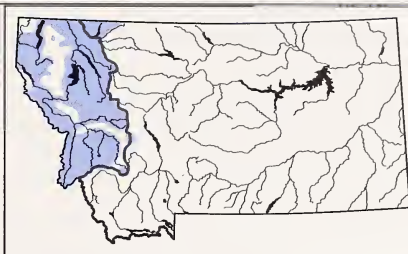
COLOR: See p. 43.

SIMILAR SPECIES: (1) Brook trout has wavy lines on back and black markings on dorsal fin. (2) See lake trout.

HABITAT: Primarily large, coldwater streams and lakes; also smaller waters. Lake dwellers ascend streams to spawn.

ORIGIN: Native to Montana.

COMMENT: The bull trout is currently found in less than half of the waters it originally inhabited in Montana, and almost half of the remaining populations are at high risk of genetic contamination from brook trout. It is therefore a fish of special concern.



OTHER NAME: Mackinaw trout.

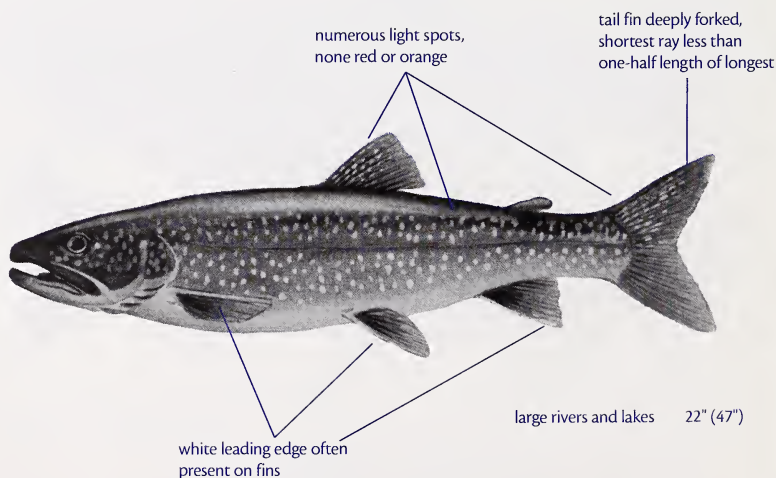
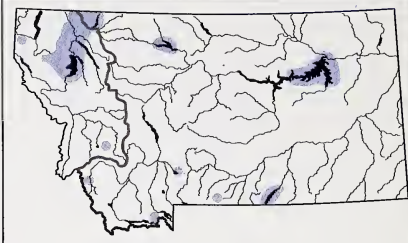
COLOR: See p. 43.

OTHER CHARACTERISTICS: May have pale wavy lines on back. Fins may have traces of orange.

SIMILAR SPECIES: (1) Bull trout has fewer spots and some that are orange or red; dark background color does not extend as far down sides, and tail fin is not as deeply forked. (2) Brook trout has nearly square tail fin and red spots with blue halos.

HABITAT: Deep, cold lakes and reservoirs.

ORIGIN: Original range is in parts of Alaska, most of Canada, and northernmost United States from the Great Lakes to the East Coast. Native to Montana in Elk, Twin, Saint Mary, and Waterton lakes.



OTHER NAME: Montana grayling.

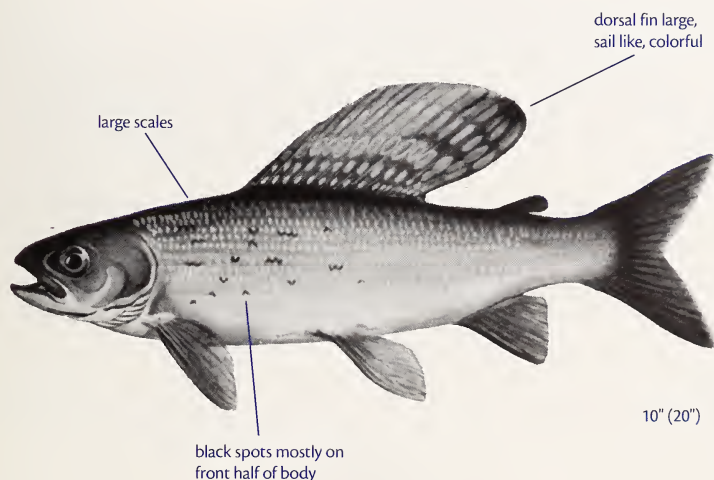
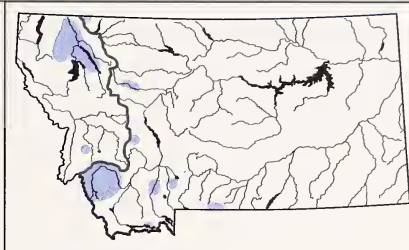
COLOR: See p. 44.

SIMILAR SPECIES: (1) Whitefishes, (2) trouts, and (3) salmon do not have sail-like dorsal fin.

HABITAT: Today, in Montana, primarily small, cold, clear lakes with tributaries suitable for spawning. Does not coexist well with other fishes except cutthroat trout and others with which it evolved.

ORIGIN: Native range extends from northwestern Canada across Alaska to Eurasia. Also, isolated populations survived the last glaciation south of the ice sheet in present-day Montana, extreme northwestern Wyoming, and Michigan. It is now extinct in Michigan.

COMMENT: About 30 Montana lakes have fishable populations. Historically a stream fish in the Missouri River Drainage upstream from Great Falls, the arctic grayling's range has been reduced until the only entirely fluvial (*stream*) population in Montana is in the Big Hole River Drainage. The fluvial form of arctic grayling is a fish of special concern.



MOUNTAIN WHITEFISH

Prosopium williamsoni

OTHER NAME: Rocky Mountain whitefish.

COLOR: See p. 44.

OTHER CHARACTERISTICS: Mouth overhung by snout.

SIMILAR SPECIES: (1) The largest pygmy whitefish is only about 8 inches in length; it has a more rounded snout and fewer scales in lateral line. (2) trouts and (3) salmon have larger mouth and smaller scales. See (4) lake whitefish and (5) arctic grayling.

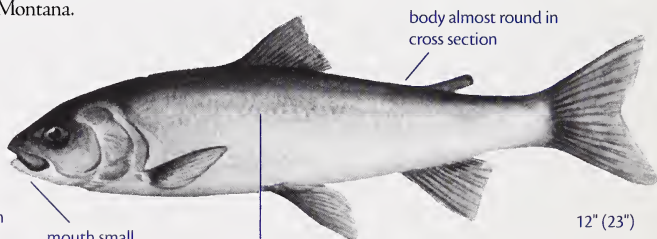
HABITAT: Medium-sized and large, clear, cold rivers; also some lakes and reservoirs.

ORIGIN: Native to Montana.

one flap of skin
between nostrils
on each side



distinct notch beneath
pupil in membrane
surrounding eye

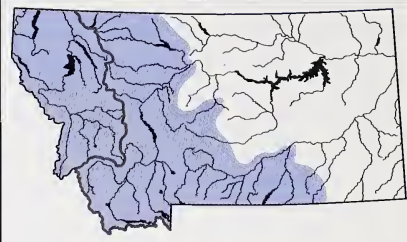


mouth small

74 or more scales in lateral line

body almost round in
cross section

12" (23")



PYGMY WHITEFISH

Prosopium coulteri

COLOR: Silvery except for olive brown back.

OTHER CHARACTERISTICS: Mouth overhung by snout. Has one flap of skin between nostrils on each side, and membrane surrounding eye has distinct notch below pupil (see mountain whitefish for illustration).

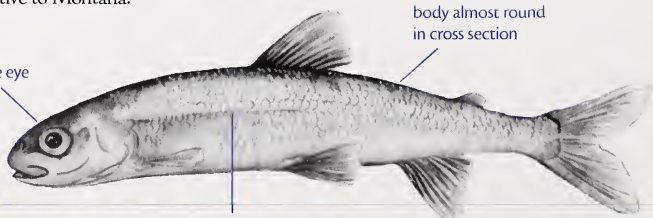
SIMILAR SPECIES: A large eye on a small whitefish is a field clue indicating a pygmy whitefish. See (1) mountain whitefish and (2) lake whitefish.

HABITAT: Deep, cold lakes; adults ascend streams to spawn.

ORIGIN: Native to Montana.

large eye

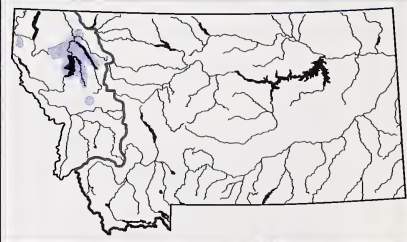
snout bluntly
rounded



70 or fewer scales in lateral line

body almost round
in cross section

5" (8")



LAKE WHITEFISH

Coregonus clupeaformis

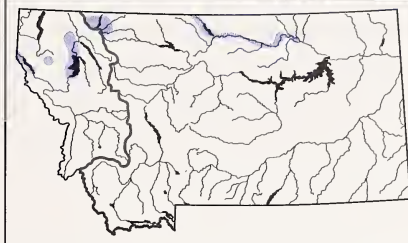
COLOR: Silvery, with olive to light brown back.

SIMILAR SPECIES: This is the only Montana whitefish that does not have a distinct notch below pupil in membrane surrounding eye.

The mountain whitefish and pygmy whitefish have nearly round bodies and only one flap of skin between nostrils.

HABITAT: Primarily deep, clear, cold lakes where it is found mostly at depths of 50 to 90 feet. Comes into shallower water to spawn, rarely ascends tributary streams. Has thrived in Fresno Reservoir, a shallow, warm, often-turbid reservoir.

ORIGIN: Native to the Great Lakes, some New England Lakes, and lakes all across Canada and Alaska. May be native to Saint Mary Lake in Glacier National Park.



two flaps of skin
between nostrils
on each side



no notch below pupil in
membrane surrounding eye

OTHER NAMES: Lake herring, tullibee.

COLOR: Silvery, somewhat darker on back.

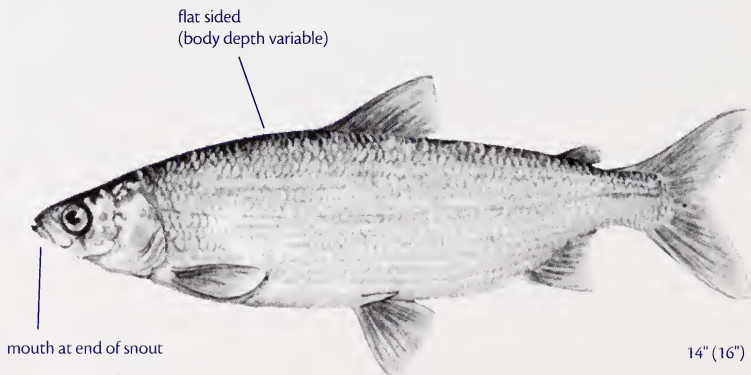
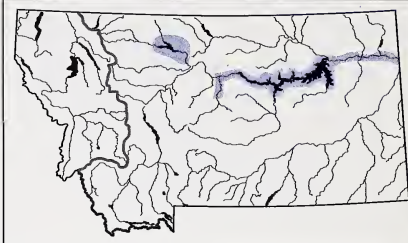
OTHER CHARACTERISTICS: Lower jaw often protrudes slightly with mouth closed, but jaws may be equal or upper may be slightly longer. Has 38 or more gill rakers on first arch, two flaps of skin between nostrils (see *lake whitefish* for illustration), and membrane surrounding eye has distinct notch below pupil (see *mountain whitefish* for illustration).

SIMILAR SPECIES: Other Montana whitefishes have a less sharp snout that overhangs mouth, and 33 or fewer gill rakers on first arch.

HABITAT: Large, cold, clear lakes.

ORIGIN: Introduced into Montana. Native to north-central and northeastern United States and most of Canada.

COMMENT: A reproducing population has become established in Fort Peck Lake as the result of heavy planting from 1984 to 1986. It was introduced as forage for sport fishes.



TROUT-PERCH FAMILY

Percopsidae

Trout-perches have characteristics of both the trout and perch families. They have an adipose fin like the trouts and yet have spines in some fins and superficially resemble members of the perch family. One species occurs in Montana.

TROUT-PERCH

Percopsis omiscomaycus

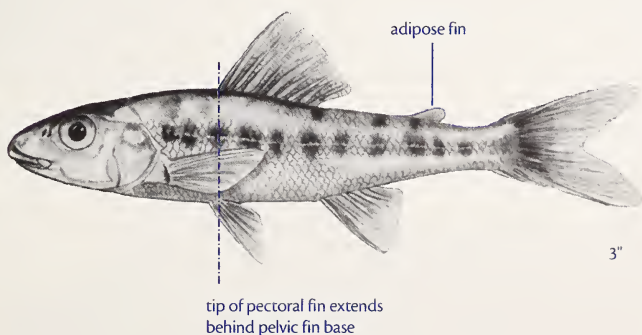
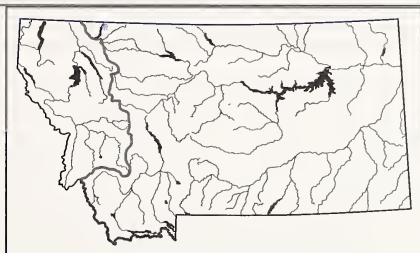
COLOR: Silvery with translucent effect; dark spots in rows on upper half of body.

OTHER CHARACTERISTICS: Dorsal and anal fins have weak spines. Teeth are small and in brush-like bands.

SIMILAR SPECIES: In (1) Rainbow smelt and (2) members of trout family; tip of pectoral fin does not extend behind front of pelvic fin. (3) Members of perch family lack an adipose fin.

HABITAT: Typically lakes but also clear to moderately turbid streams, particularly when spawning.

ORIGIN: Native in Montana and in a broad band extending southeastward from Alaska across much of Canada to Kansas and West Virginia. Currently the only Montana records are for Lower Saint Mary Lake and associated Saint Mary Canal; therefore, it is a fish of special concern.



BULLHEAD CATFISH FAMILY

Ictaluridae

This family is characterized by scaleless fishes with eight long “cat’s whiskers” (barbels), an adipose fin, and a sharp spine at the front of the dorsal and each pectoral fin. In some species the pectoral spines have a sawlike rear edge.

CHANNEL CATFISH

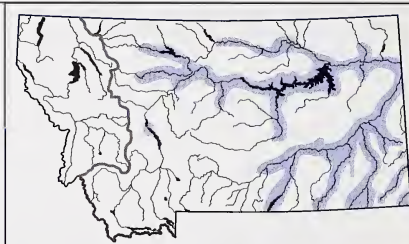
Ictalurus punctatus

COLOR: See p. 44.

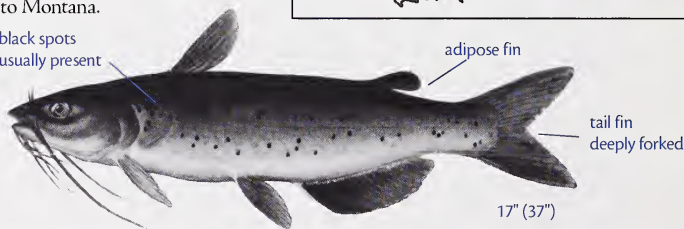
SIMILAR SPECIES: Other Montana catfishes do not have a deeply forked tail fin.

HABITAT: Large rivers and lowland lakes. Thrives at water temperatures above 70° F. Tolerates turbid water.

ORIGIN: Native to Montana.



black spots
usually present



17" (37")

STONECAT

Noturus flavus

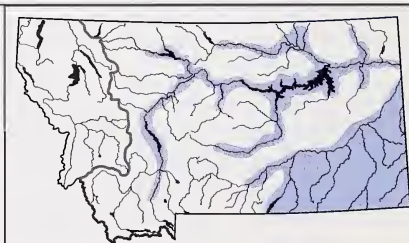
COLOR: Overall yellowish brown; back darker, underside light yellow or white.

SIMILAR SPECIES: (1) Other Montana catfishes have flaplike adipose fin that is free at posterior end. In addition, channel catfish has forked tail fin. (2) See burbot.

HABITAT: Swift-water areas of streams among rocks or under logs; also lakes over sand and gravel bottom where there is wave action.

COMMENT: Handle stonecats carefully; spines in their fins have well-developed poison glands that can inflict a beelike sting. Ordinarily this is not dangerous.

ORIGIN: Native to Montana.



eyes almost on
top of head



6" (10")

BLACK BULLHEAD

Ameiurus melas

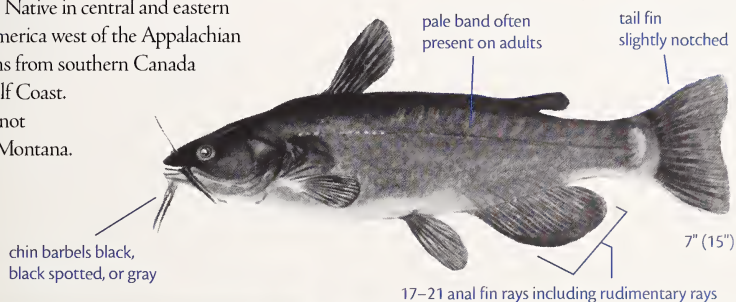
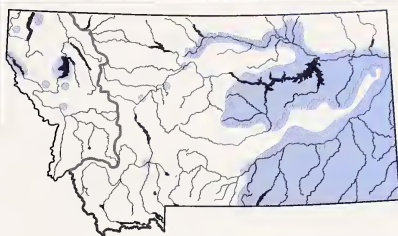
COLOR: See p. 44.

OTHER CHARACTERISTICS: Rear edge of spine in pectoral fins smooth or nearly so. Membranes between fin rays darker than rays.

SIMILAR SPECIES: (1) Yellow bullhead has white or light-colored chin barbels (no black pigment) and 24 or more rays in anal fin. See (2) stonecat and (3) channel catfish.

HABITAT: Turbid, mud-bottomed lakes and ponds; also pools and backwaters of streams. Tolerates high water temperatures and low levels of dissolved oxygen.

ORIGIN: Native in central and eastern North America west of the Appalachian Mountains from southern Canada to the Gulf Coast. Probably not native to Montana.



YELLOW BULLHEAD

Ameiurus natalis

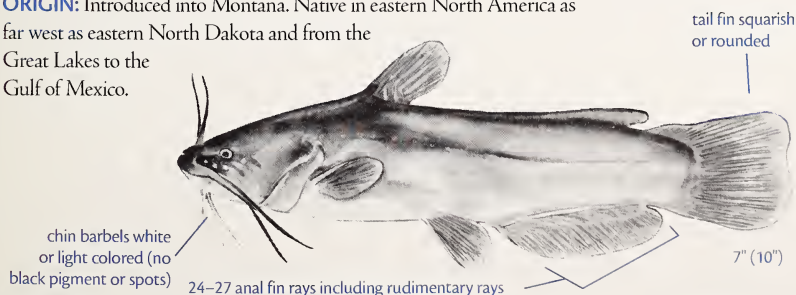
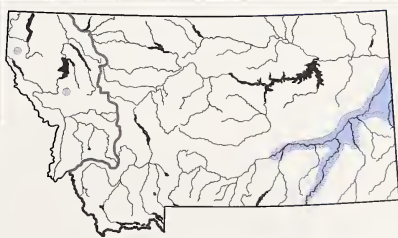
COLOR: Overall yellowish brown to yellow, back darker; underside yellow or white. Young usually dark brown or black, with light-colored underside.

OTHER CHARACTERISTICS: Rear edge of spine in pectoral fins has sawlike teeth.

SIMILAR SPECIES: See (1) black bullhead, (2) stonecat, and (3) channel catfish.

HABITAT: Weedy, shallow, clear-water areas of lakes and slow-moving streams.

ORIGIN: Introduced into Montana. Native in eastern North America as far west as eastern North Dakota and from the Great Lakes to the Gulf of Mexico.



CODFISH FAMILY

Gadidae

Codfishes have long bodies. All fins are soft rayed and the pelvic fins are located far forward. The burbot is the only freshwater member of this family.

BURBOT

Lota Lota

OTHER NAME: Ling.

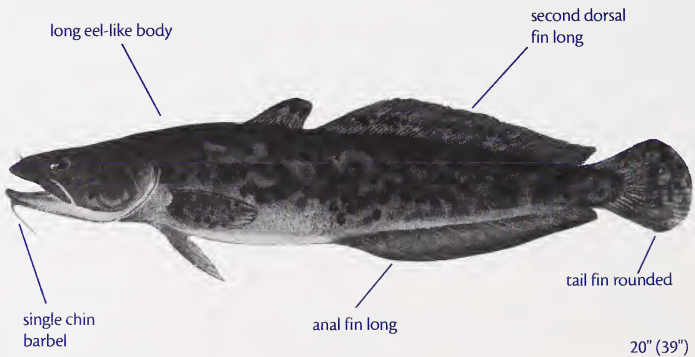
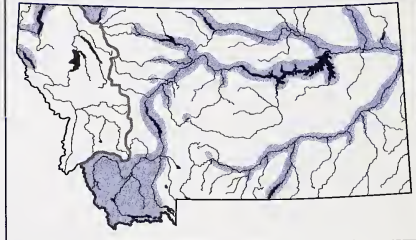
COLOR: See p. 40.

OTHER CHARACTERISTICS: Skin appears smooth, but tiny embedded scales are present.

SIMILAR SPECIES: Montana members of the bull-head catfish family have eight barbels and pelvic fins are placed much farther back on body.

HABITAT: Large rivers; cold, deep lakes and reservoirs.

ORIGIN: Native to Montana.



STICKLEBACK FAMILY

Gasterosteidae

Sticklebacks are small fishes with a series of separate spines on the back in front of a soft-rayed dorsal fin. There is one representative of this family in Montana waters.

BROOK STICKLEBACK

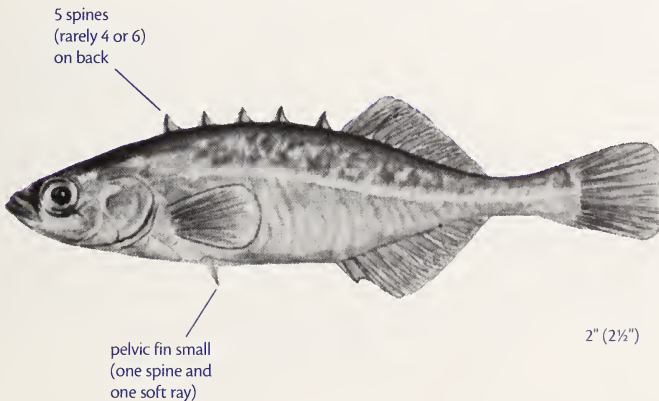
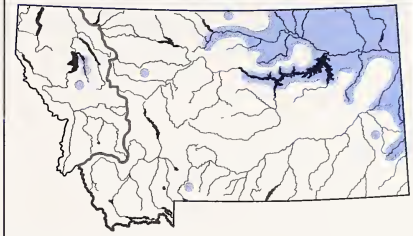
Culaea inconstans

COLOR: Olive green with mottling or light spots on sides; underside light yellow to silver. During breeding season males are black with tinges of red; females may be dusky.

OTHER CHARACTERISTICS: Body smooth, without scales, but with minute bony plates about the pores on the lateral line.

HABITAT: Associated with dense vegetation in slow, clear streams and shallow lakes.

ORIGIN: Native to Montana.



SUNFISH FAMILY

Centrarchidae

This family contains not only the sunfishes and rock bass, but also the crappies and black basses (*they are not actually black*). The dorsal fin has spiny- and soft-rayed portions which are broadly (*or, in the black basses, narrowly*) joined into a single fin. The paired fins are nearly one above the other.

WHITE CRAPPIE

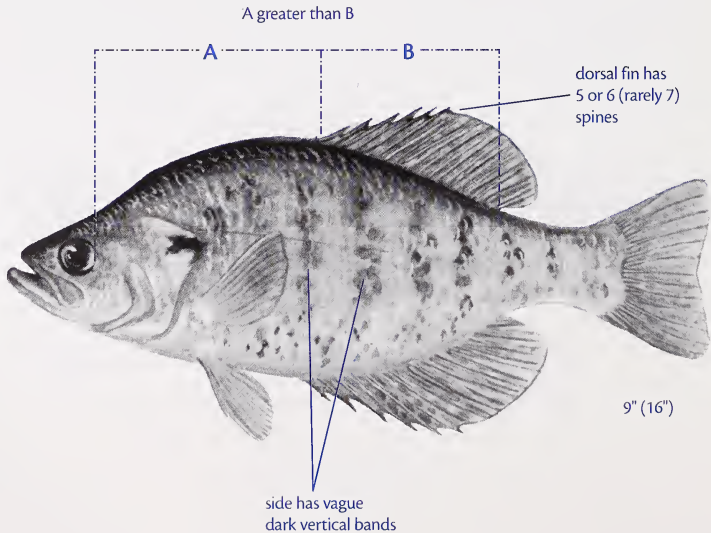
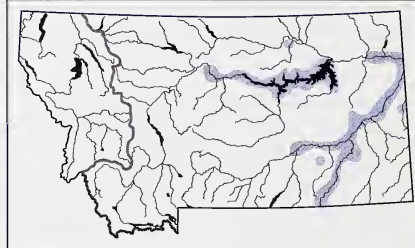
Pomoxis annularis

COLOR: See p. 45.

SIMILAR SPECIES: See black crappie.

HABITAT: Ponds, lakes, and reservoirs and slow portions of streams. Seeks weedy areas, logs, and other protective cover. Seems more tolerant of turbid water than black crappie.

ORIGIN: Introduced into Montana. Native from eastern South Dakota and southern Great Lakes region to the Gulf Coast from Texas to Alabama.



BLACK CRAPPIE

Pomoxis nigromaculatus

OTHER NAME: Calico bass.

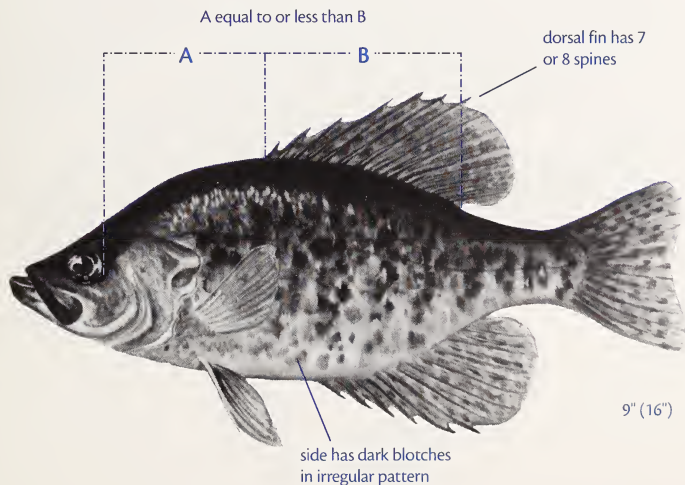
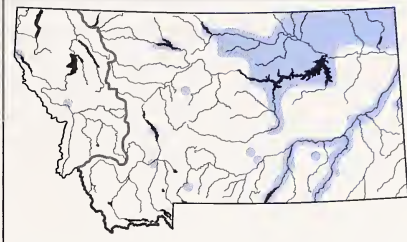
COLOR: See p. 45.

OTHER CHARACTERISTICS: Fish from turbid water may be lighter colored.

SIMILAR SPECIES: White crappie's dorsal fin has a shorter base, is set farther back, and has 5 or 6 spines (*rarely 7*) compared with the black crappie's 7 or 8. White crappie has vague vertical bands on sides.

HABITAT: Ponds, lakes, reservoirs, and slow portions of streams. Prefers clear water and abundant cover such as submerged timber or aquatic vegetation.

ORIGIN: Introduced into Montana. Native in central and eastern North America west of the Appalachian Mountains from southern Canada to the Gulf Coast, and north on the Atlantic Coast from Florida to Virginia.



OTHER NAME: Common sunfish.

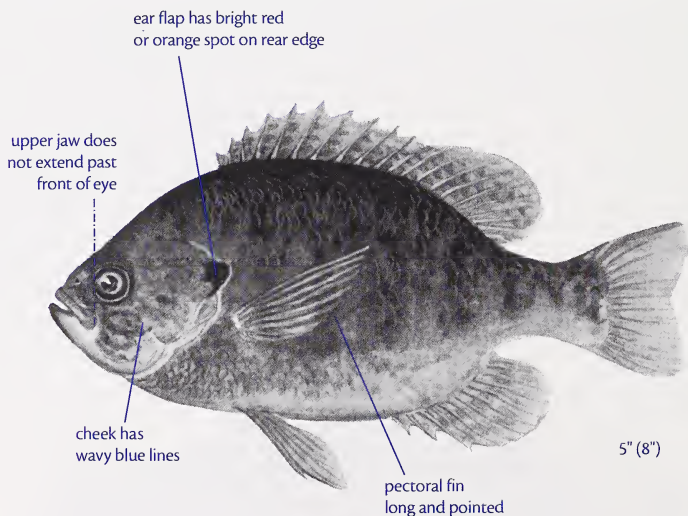
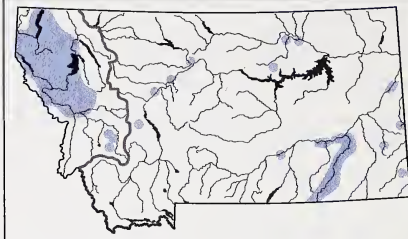
COLOR: See p. 45.

OTHER CHARACTERISTICS: Gill rakers short and stubby (see illustration).

SIMILAR SPECIES: (1) Bluegill has completely black ear flap, longer gill rakers, and black blotch on rear of dorsal fin. See (2) green sunfish and (3) rock bass.

HABITAT: Ponds, small lakes, margins of large lakes, and slow streams. Prefers areas with aquatic vegetation and submerged brush.

ORIGIN: Introduced into Montana. Native to north-central and eastern North America.



Gill rakers
on first arch

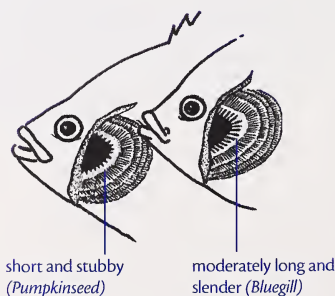


illustration by Vern Craig

BLUEGILL

Lepomis macrochirus

OTHER NAME: Bluegill sunfish.

COLOR: See p. 55.

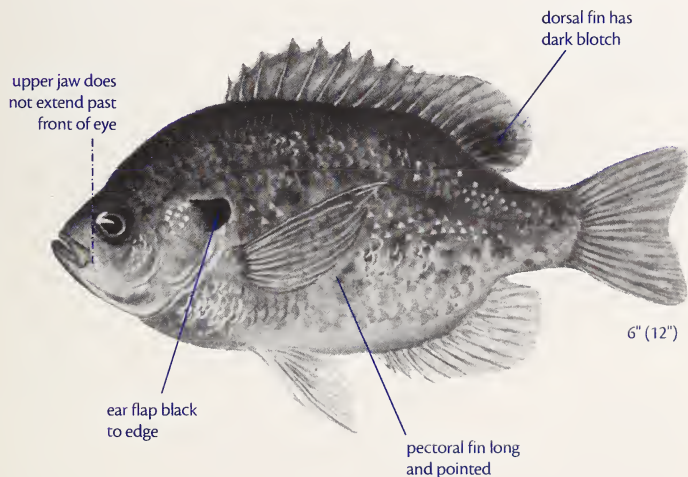
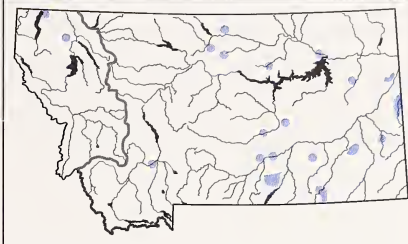
OTHER CHARACTERISTICS: Gill rakers moderately long and slender (see p. 70 for illustration). Ear flap smaller on females and young males than on adult males. Young usually have vertical bars on sides that become faint on adults.

SIMILAR SPECIES: See (1) pumpkinseed, (2) green sunfish, and (3) rock bass.

HABITAT: Areas of aquatic vegetation in comparatively warm ponds and lakes; slow, weedy streams.

ORIGIN: Introduced into Montana. Original range was from southern Canada through eastern, central, and southern United States including Texas.

COMMENT: The name bluegill comes from the bluish color on the lower part of the gill cover.



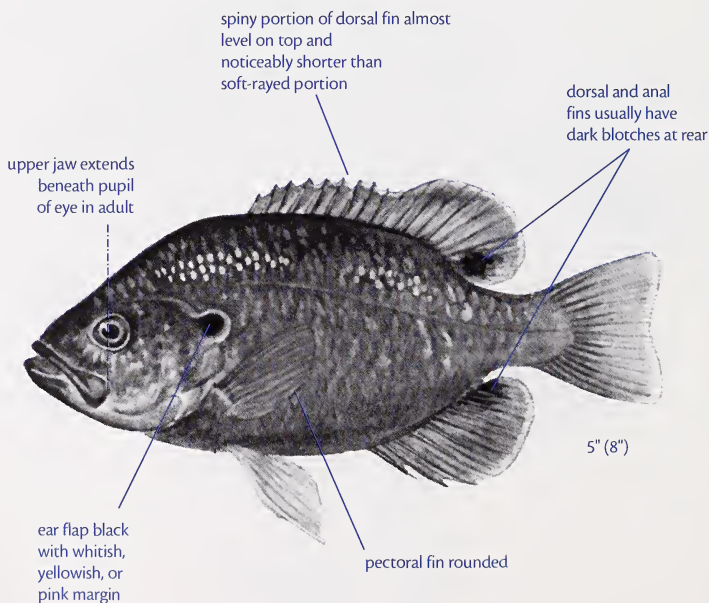
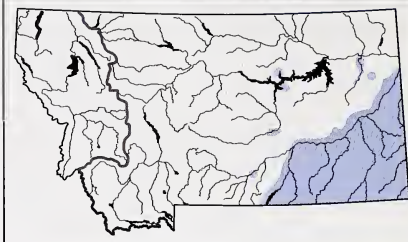
COLOR: See p. 46.

OTHER CHARACTERISTICS: Body robust. Gill rakers long and slender. Breeding males have light-colored fringe on dorsal, anal, and tail fins.

SIMILAR SPECIES: (1) Bluegill and (2) pumpkinseed have smaller mouth and pointed, usually longer, pectoral fins. Bluegill has completely black ear flap; pumpkinseed has short, stubby gill rakers. Both are usually deeper bodied than the green sunfish. (3) See rock bass.

HABITAT: Slow-moving streams at lower elevations and shallows of lakes. Tolerates turbid water, high temperatures, and low dissolved oxygen.

ORIGIN: Introduced into Montana. Original range includes much of central and eastern North America west of the Appalachian Mountains from the Great Lakes region south to Georgia and north-eastern Mexico.



ROCK BASS

Ambloplites rupestris

OTHER NAMES: Redeye, goggle eye.

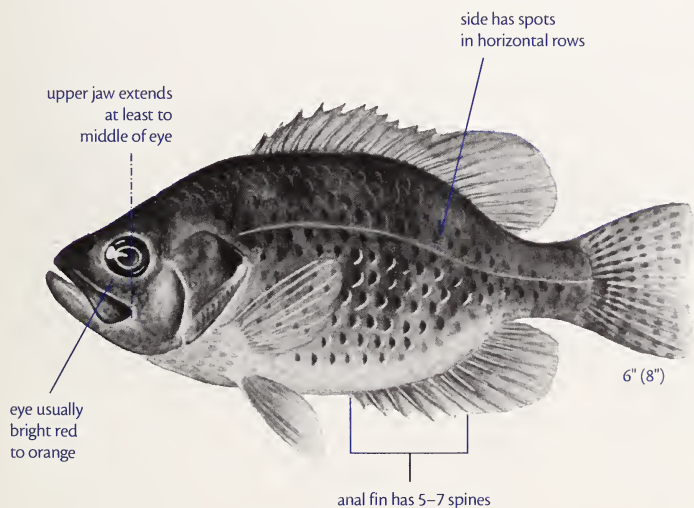
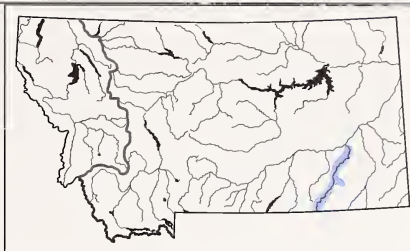
COLOR: See p. 46.

OTHER CHARACTERISTICS: Body robust.

SIMILAR SPECIES: (1) Pumpkinseed, (2) bluegill, and (3) green sunfish lack the red eye and rows of spots on the side, and have only three spines in the anal fin.

HABITAT: Pools of rocky-bottomed streams; rocky, shallow areas of lakes. Seeks moderately warm water. In Montana found only in Tongue River Drainage.

ORIGIN: Native range is from southern Canada as far west as Manitoba, through central and eastern United States to Alabama and Georgia. Was introduced into the Tongue River in Wyoming and moved downstream into Montana.



SMALLMOUTH BASS

Micropterus dolomieu

OTHER NAMES: Northern smallmouth bass, smallmouth black bass, bronze-back.

COLOR: See p. 47.

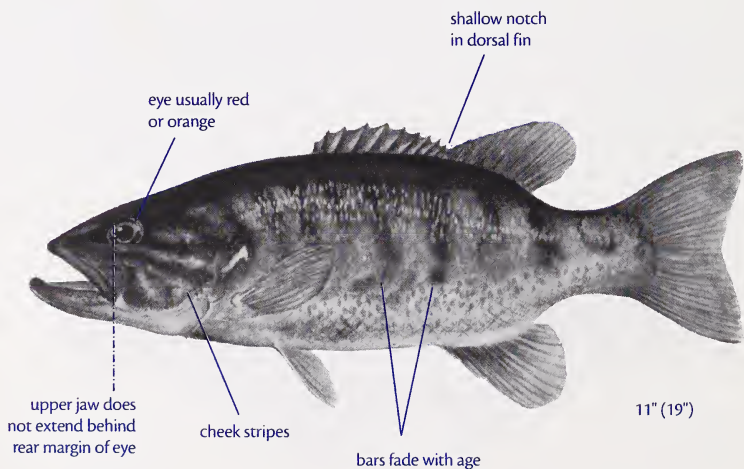
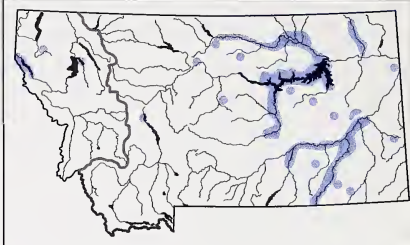
OTHER CHARACTERISTICS: Length of longest dorsal spine is less than twice the length of shortest dorsal spine at notch.

Young have tricolored tail fin with yellow or orange innermost, a dark vertical band in center, and a whitish outer edge.

SIMILAR SPECIES: See largemouth bass.

HABITAT: Over boulders and to lesser extent over gravel in cool, clear lakes and streams.

ORIGIN: Introduced into Montana. Native from Minnesota to Quebec and southward to Oklahoma and Alabama.



LARGEMOUTH BASS

Micropterus salmoides

OTHER NAME: Largemouth black bass.

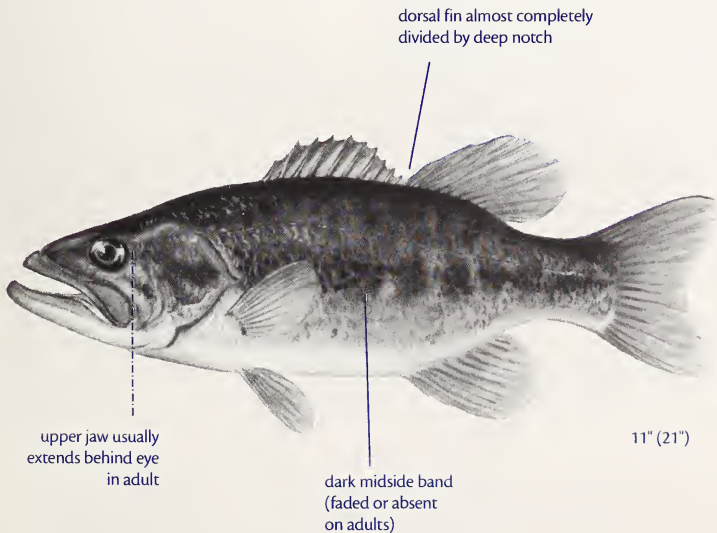
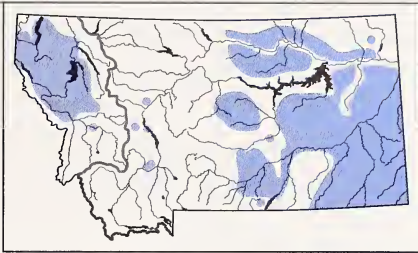
COLOR: See p. 47.

OTHER CHARACTERISTICS: Length of longest dorsal spine at least twice the length of shortest dorsal spine at notch. Young have a bicolored tail fin, the rear part being darker than the forward part.

SIMILAR SPECIES: Smallmouth bass has a smaller mouth and a broader connection between spiny- and soft-rayed portions of dorsal fin. It is more streamlined, tends to brownish hue (*largemouth to blackish*), has prominent stripes on cheek, and lacks dark midside band that is so prominent on young largemouth.

HABITAT: Clear, mud-bottomed lakes and stream backwaters. Seeks areas with comparatively warm summer water temperatures and ample aquatic vegetation.

ORIGIN: Introduced into Montana. Native from southeastern Canada southward through the Great Lakes and Mississippi Valley to the Gulf Coast, and north on the Atlantic Coast from Florida to Virginia.



DRUM FAMILY

Sciaenidae

Drums are basslike, spiny-rayed fishes that are unique in having the lateral line extend onto the tail fin. Montana has one representative of this family.

FRESHWATER DRUM

Aplodinotus grunniens

OTHER NAME: Sheepshead.

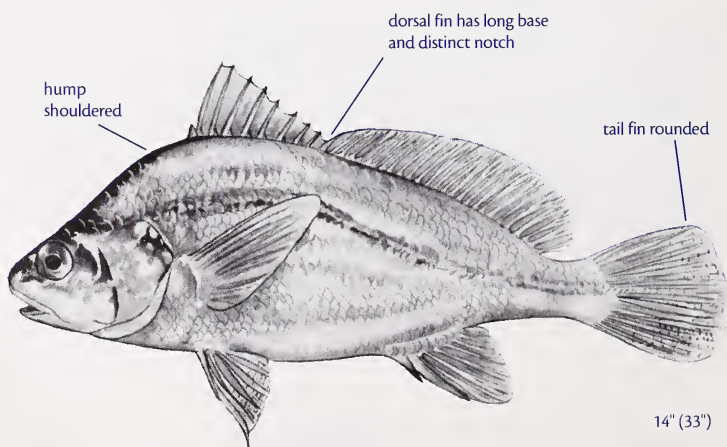
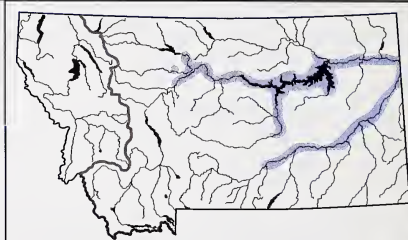
COLOR: Silvery with a pearl-gray back.

OTHER CHARACTERISTICS: This is the only Montana fish in which the lateral line extends onto the tail fin.

HABITAT: Large streams, large lakes, and reservoirs.

ORIGIN: Native to Montana.

COMMENT: The drum's unusually large otoliths (*ear bones*) are ivorylike and prized as "lucky bones." This fish is named for the drumming sound, heard mostly during the summer, produced by special muscles acting on the air bladder.

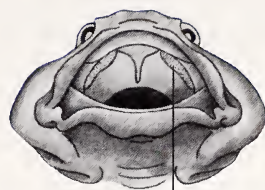


SCULPIN FAMILY

Cottidae

Sculpins are small, bottom-dwelling, spiny-rayed (*spines are weak*) fishes with large, flattened heads and fanlike pectoral fins. The long dorsal fin has a spiny-rayed portion and a soft-rayed portion, which are usually narrowly divided. Scales are absent or reduced, and in many species the body is partly covered with prickles.

These fishes are variable in structure and color, often making identification perplexing even for fisheries biologists. The development of palatine teeth is useful in separating some species. They are in the roof of the mouth on a pair of bones that extend outward and rearward on each side as shown at right.



palatine teeth

The presence of palatine teeth may be determined by carefully brushing the area where they should occur with the side of a needle. Care should be taken not to mistake other teeth on the roof of the mouth for the palatines.

Adapted from: J. D. McPhail and C. C. Lindsey, *Freshwater Fishes of Northwestern Canada and Alaska*, Fish. Res. Bd. Canada Bull. 173, 1970, p. 316.

SLIMY SCULPIN

Cottus cognatus

OTHER NAME: Bullhead.

COLOR: Back and sides brown to black with mottling, dark bands often present. Underside white. First dorsal fin fringed with orange on breeding males.

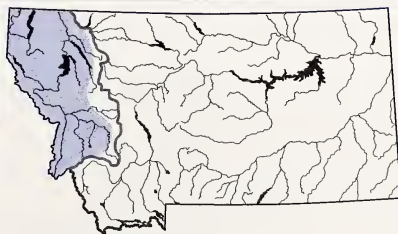
OTHER CHARACTERISTICS: No palatine teeth.

Pelvic fin has three or four soft rays; if a fourth (*inner*) ray is present, it is usually two-thirds or less the length of the longest. Other Montana sculpins have four fully developed soft rays. Note: sculpin pelvic fins have one spine in addition to the soft rays. It is encased in a fleshy membrane with the first (*outer*) ray and is not distinct.

SIMILAR SPECIES: (1) Mottled sculpin have palatine teeth.

HABITAT: Rocky riffles of cold, clear streams; also stony shallows in clear lakes.

ORIGIN: Native to Montana.



lateral line incomplete, ending under center of 2nd dorsal fin

skin slimy, almost no prickles

3" (4")

SPOONHEAD SCULPIN

Cottus ricei

OTHER NAME: Bullhead.

COLOR: Light brown with two to four saddles under second dorsal fin. Underside whitish.

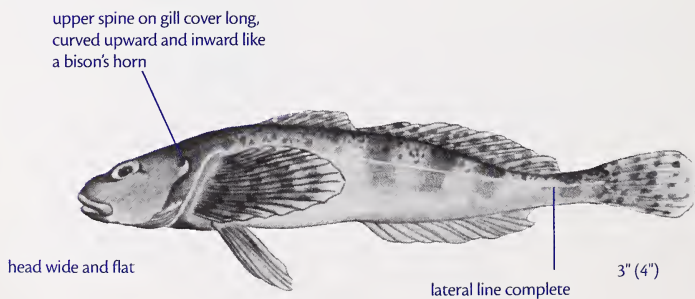
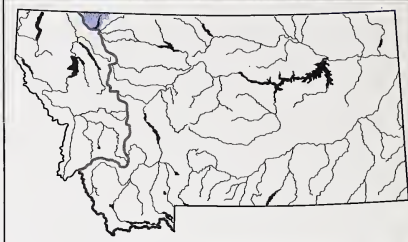
OTHER CHARACTERISTICS: No palatine teeth. Body slender. One pore on midline under tip of chin. Prickles often dense (*may cover entire body*), but sometimes sparse or absent.

SIMILAR SPECIES: No other Montana sculpin has the "bison horn" spine on gill cover, and the others have two pores under tip of chin.

HABITAT: Small, swift streams to larger rivers; shallows and deep water of lakes.

ORIGIN: Naturally distributed from northwestern Canada to Great Lakes region. In Montana known only from Glacier National Park until 1986, when one was removed from the stomach of a lake trout caught in Lower Saint Mary Lake just outside the eastern park boundary.

COMMENT: Designated a fish of special concern due to its limited distribution in Montana.



TORRENT SCULPIN

Cottus rhotheus

OTHER NAME: Bullhead.

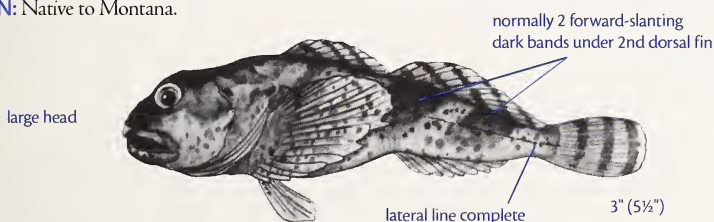
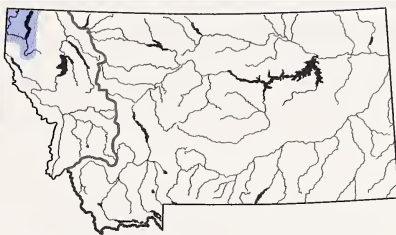
COLOR: Gray-brown with black speckling. Underside light, chin strongly mottled. First dorsal fin fringed with orange on spawning male.

OTHER CHARACTERISTICS: Palatine teeth present. Body robust. Usually has coarse prickles on back, sides, and sometimes on caudal peduncle.

SIMILAR SPECIES: Torrent sculpin is distinguished from other Montana sculpins by its large head, strongly mottled chin, and distinctly forward-slanting dark bands on sides.

HABITAT: Riffles of cold, clear streams; to a lesser extent, the rocky shoals of large lakes.

ORIGIN: Native to Montana.



MOTTLED SCULPIN

Cottus bairdi

OTHER NAMES: Bullhead, muddler.

COLOR: Back and sides slate to brown with mottling and dark blotches. May have two or three dark saddles under second dorsal fin. Underside whitish. First dorsal fin fringed with orange or red on breeding males.

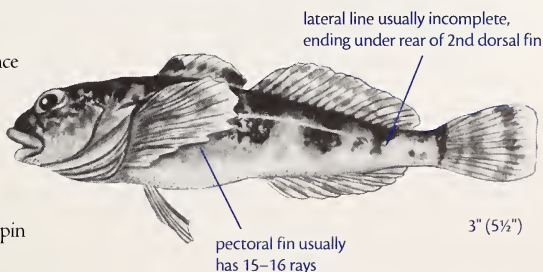
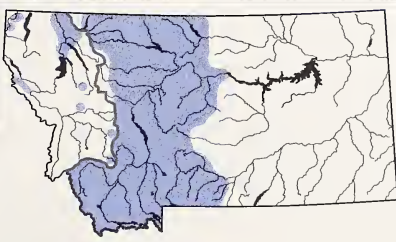
OTHER CHARACTERISTICS: Palatine teeth present.

SIMILAR SPECIES: (1) See slimy sculpin.

HABITAT: Cold streams; to a lesser extent, rocky shorelines of lakes.

ORIGIN: Native to Montana.

COMMENT: New genetic evidence indicates the shorthead sculpin is a variant of the mottled sculpin and not a separate species. The distribution of the shorthead sculpin has been incorporated into the mottled sculpin distribution map.



TEMPERATE BASS FAMILY

Percichthyidae

These are slab-sided, moderately deep-bodied, spiny-rayed fishes with numerous teeth and strong jaws. The first dorsal fin is entirely separate from the second or slightly joined at the base, and there are three spines in the anal fin.

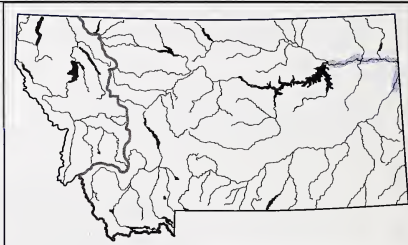
WHITE BASS

Morone chrysops

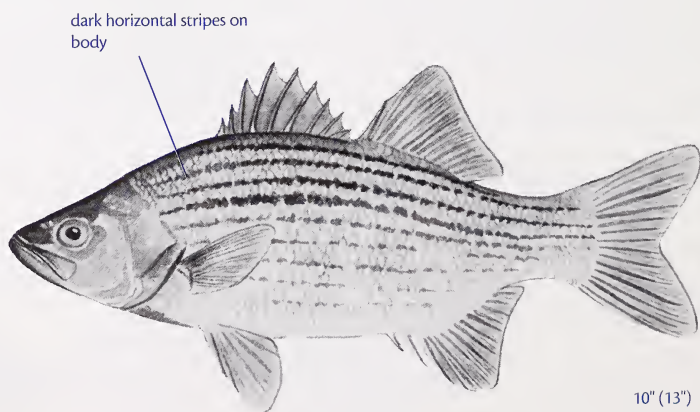
COLOR: Silvery with six to nine dark, narrow stripes on side. Eye tinted with yellow.

SIMILAR SPECIES: No other Montana spiny-rayed fish has horizontal stripes on its side.

HABITAT: Deep pools in rivers and open water of large, clear lakes and reservoirs.



ORIGIN: Not native to Montana. Native range extends from the St. Lawrence River in eastern Canada through the Great Lakes and Mississippi River Drainage south to Louisiana and Texas. The white bass found in Montana apparently came upstream from Lake Sakakawea (created by Garrison Dam) in North Dakota, where they have been planted.



10" (13")

PERCH FAMILY

Percidae

These spiny-rayed fishes have two well-separated dorsal fins—the front one has spines, and the rear one has all or almost all soft rays. The paired fins are nearly one above the other.

YELLOW PERCH

Perca flavescens

OTHER NAME: Perch.

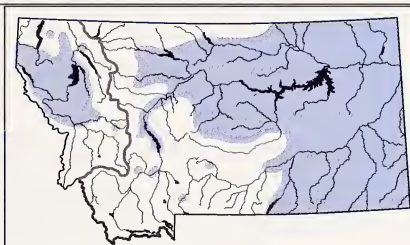
COLOR: See p. 46.

OTHER CHARACTERISTICS: Many small teeth but no canine teeth. Anal fin has two spines and six to eight soft rays. Lower fins reddish orange in breeding males.

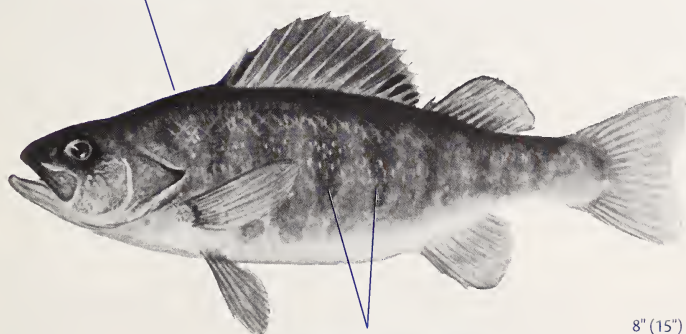
SIMILAR SPECIES: (1) Young walleye or sauger might be mistaken for small yellow perch. The former two have large canine or tearing teeth, and 11 to 14 soft rays in the anal fin. See (2) Iowa darter.

HABITAT: Warm to cool, clear lakes with moderate amount of vegetation; to a lesser extent, slow, weedy streams.

ORIGIN: Introduced into Montana. Original range is from Great Slave Lake to Nova Scotia in Canada, south through north-central and northeastern United States, and along the Atlantic Coast to South Carolina.



body moderately long
and somewhat flat sided



side yellow to yellow-green
with 6–8 dark vertical bands

8" (15")

WALLEYE

Stizostedion vitreum

OTHER NAMES: Wall-eyed pike, yellow pikeperch.

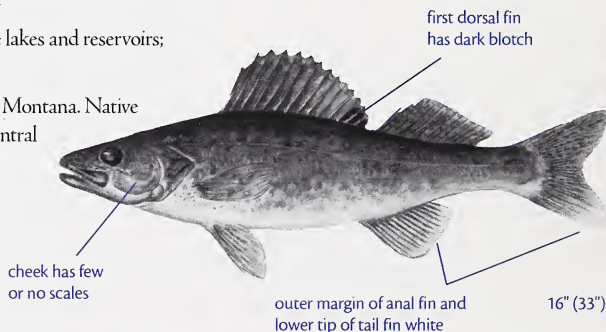
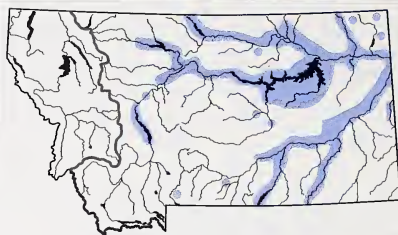
COLOR: See p. 47.

OTHER CHARACTERISTICS: Jaws and roof of mouth have large canine teeth. Anal fin has 2 spines and 11 to 14 (*usually 12 or 13*) soft rays. Body often has golden hue.

SIMILAR SPECIES: See (1) sauger, (2) yellow perch, and (3) Iowa darter.

HABITAT: Primarily large lakes and reservoirs; to a lesser extent, rivers.

ORIGIN: Introduced into Montana. Native to much of Canada and central and eastern United States



SAUGER

Stizostedion canadense

OTHER NAME: Sand pike.

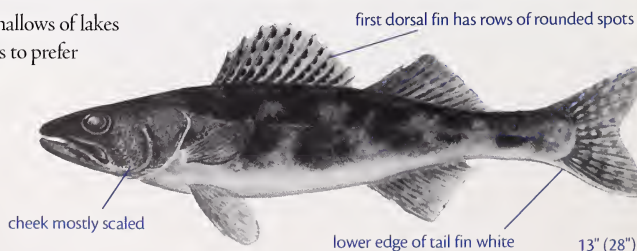
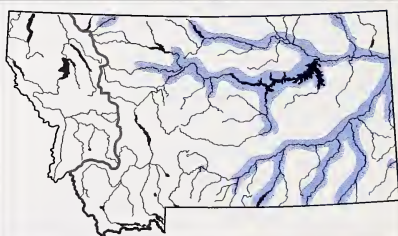
COLOR: See p. 47.

OTHER CHARACTERISTICS: Jaws and roof of mouth have large canine teeth. Body almost round in cross section. Anal fin has two spines and 11 to 14 (*usually 12 or 13*) soft rays. Body often has grayish hue with dark blotches.

SIMILAR SPECIES: (1) Walleye has large, dark spot at rear of first dorsal fin; lower lobe of tail fin has white tip; cheeks have few scales if any. Walleye and sauger are known to hybridize in Montana. The hybrid is known as saugeye. There is no simple field technique to distinguish it from parent stocks. See (2) yellow perch and (3) Iowa darter.

HABITAT: Rivers; shallows of lakes and reservoirs. Seems to prefer turbid water.

ORIGIN: Native to Montana.



COLOR: Overall greenish or brownish with about eight saddle bands across back and nine to twelve dark blotches on side. In breeding males these blotches become bluish green with rust red between them. The underside becomes orange and the first dorsal fin has a reddish band between a blue base and blue outer edge.

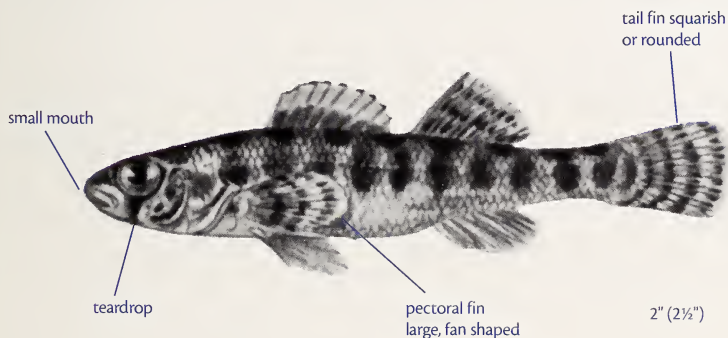
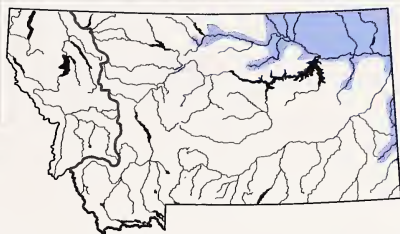
OTHER CHARACTERISTICS: Body slender, eye large, lateral line incomplete.

SIMILAR SPECIES: Could be mistaken for young yellow perch, walleye, or sauger; however, these have a forked tail fin (*well forked on walleye and sauger, slightly forked on yellow perch*) and lack the teardrop marking under the eye.

HABITAT: Clear, weedy, slow-moving streams and shallows of lakes.

ORIGIN: Native to Montana.

COMMENT: One of Montana's smallest native fishes, the Iowa darter is a bottom dweller. It moves by short, quick dashes, hence the name "darter."



SPAWNING SEASONS

Both water temperature and day length are important in controlling the reproductive rhythm of seasonal spawners. Typical spawning seasons for Montana fishes are:

Spring

Rainbow trout	Cutthroat trout	Arctic grayling
Northern pike	Goldeye	Smallmouth bass
Rock bass	White bass	Crappies
Yellow perch	Walleye	Sauger
Iowa darter	Rainbow smelt	Freshwater drum
Shortnose gar	Sculpin family	Brook stickleback
Central mudminnow		

Spring or Summer

Golden trout	Largemouth bass	Sunfishes
Paddlefish	Sturgeon family	Bullhead catfish family
Sucker family	Minnnow family	Plains killifish
Trout-perch		

Fall

Brown trout	Brook trout	Bull trout
Lake trout	Kokanee ¹	Chinook salmon ¹
Whitefishes (<i>including cisco</i>)		

Winter

Burbot

¹*Pacific salmon die after spawning*

PROCEDURE FOR HAVING A FISH DECLARED A STATE RECORD

Montana Fish, Wildlife & Parks administers the record fish program.

There are three requirements for having a fish declared a record:

1. It must be legally caught in Montana.
2. It should be weighed before witnesses on a government-inspected scale such as those found in most grocery stores, and the weight should be certified by a department employee. If a department employee is not present, an affidavit from the store will suffice. The fish's length—measured from the tip of the snout to the farthest tip of the tail fin—is also desirable information; it, too, should be certified by a department employee or other witness.
3. Identification must be verified by a qualified person, preferably a department employee. For some species a good photograph will suffice.

Provide this information to a department employee or send it to:

Conservation Education Division, Montana Fish, Wildlife & Parks, 1420 East Sixth Avenue, Helena, MT 59620

Species	Weight	Angler	Year	Location
Arctic grayling	3.21 lbs.	Frederick C. Dahl	1994	Handkerchief Lake
Bigmouth buffalo	57.75 lbs.	Craig D. Grassel	1994	Nelson Reservoir
Black bullhead	2.33 lbs.	Darwin Zempel, Jr.	1994	Lower Flathead River
Black crappie	3.13 lbs.	Al Elser	1973	Tongue River Reservoir
Blue sucker	11.46 lbs.	Doug Askin	1989	Yellowstone River (<i>near Miles City</i>)
Bluegill	2.64 lbs.	Brent Fladmo	1983	Peterson's Stock Dam
Brook trout	9.06 lbs.	John R. Cook	1940	Lower Two Medicine Lake
Brown trout	29.00 lbs.	E. H. "Peck" Bacon	1966	Wade Lake
Bull trout	25.63 lbs.	James Hyer	1916	unknown
Burbot	17.08 lbs.	Jeff E. Iwen	1989	Missouri River (<i>near Wolf Point</i>)
Carp	40.20 lbs.	Jared Albus	1998	Nelson Reservoir
Channel catfish	27.17 lbs.	Ed Ellertson	1998	Castle Rock Reservoir
Chinook	31.13 lbs.	Carl L. Niles	1991	Fort Peck Reservoir
Cisco	1.75 lbs.	Curt Zimmerman	2001	Below Fort Peck Powerhouse
Coho salmon	4.88 lbs.	Irven Stohl	1973	Fort Peck Reservoir
Cutthroat trout	16.00 lbs.	William D. Sands	1955	Red Eagle Lake
Flathead chub	0.59 lbs.	Douglas Jordan	2001	Thornton Pond
Freshwater drum	20.44 lbs.	Richard C. Lee	1987	Fort Peck Reservoir
Golden trout	5.43 lbs.	Mike Malixi	2000	Cave Lake
Goldeye	3.18 lbs.	Don Nevriy	2000	Nelson Reservoir
Green sunfish	0.56 lbs.	Roger Fliger	1991	Castle Rock Reservoir
Kokanee	7.52 lbs.	Deed DeGolier	2001	Hauser Reservoir
Lake trout	42.00 lbs.	Dave Larson	1979	Flathead Lake (<i>east shore</i>)
Lake whitefish	10.08 lbs.	Theo Hamby	1995	Lower St. Mary Lake
Largemouth bass	8.29 lbs.	Adam Nelson	1999	Many Lakes
Largescale sucker	5.06 lbs.	Loren Kujawa	1996	Kootenai River
Longnose sucker	3.27 lbs.	Ray Quigley	1988	Marias River
Mottled sculpin	0.05 lbs.	Brad Sullivan	2001	Belt Creek
Mountain sucker	1.60 lbs.	Robert Garwood	2001	Beaver Creek Reservoir
Mountain whitefish	5.09 lbs.	Mervin Fenimore	1987	Kootenai River
Northern pike	37.50 lbs.	Lance Moyler	1972	Tongue River Reservoir
Northern pikeminnow	7.88 lbs.	Darrel Torgrimson	1991	Noxon Rapids Reservoir

(CONTINUED)

MONTANA'S RECORD-SETTING FISH

THROUGH 2001

Species	Weight	Angler	Year	Location
Paddlefish	142.50 lbs.	Larry Branstetter	1973	Missouri River
Pallid sturgeon	60.00 lbs.	Gene Sattler	1979	Yellowstone River
Peamouth	0.74 lbs.	Angela Price	1999	Noxon Rapids Reservoir
Pumpkinseed	0.95 lbs.	Tim Colver	1985	Milnor Lake
Pygmy whitefish	0.18 lbs.	Frank Gamma	1999	Ashley Lake
Rainbow trout	33.10 lbs.	Jack Housel, Jr.	1997	Kootenai River (David Thompson Bridge)
Rainbow-cutthroat hybrid	30.25 lbs.	Pat Kelly	1982	Ashley Lake
Redside shiner	0.10 lbs.	Josh Ahles	2001	Lost Lake
River carpsucker	6.42 lbs.	Bill Odenbach	2000	Yellowstone River (near Intake)
Rock bass	0.57 lbs.	Don Holzheimer	1989	Tongue River Reservoir
Sauger	8.81 lbs.	Gene Moore	1994	Fort Peck Reservoir
Saugeye	15.66	Myron Kibler	1995	Fort Peck Reservoir
Shorthead redhorse sucker	4.68 lbs.	Ray Quigley	1985	Marias River (near Loma)
Shortnose gar	3.06 lbs.	John Johnson	1977	Fort Peck dredge cuts
Shovelnose sturgeon	13.72 lbs.	Sidney L. Storm	1986	Missouri River
Smallmouth bass	6.40 lbs.	Ken Riska	2000	Flathead River
Smallmouth bass (tie)	6.40 lbs.	Mike Otten	2000	Fort Peck Reservoir
Smallmouth buffalo	32.63 lbs.	Richard Liesener	1994	Nelson Reservoir
Stonecat	0.54 lbs.	Dale Bjerga	1996	Milk River
Tiger muskellunge	27.00 lbs.	Dan Dupea	1994	Lebo Lake
Tiger trout	4.04 lbs.	Joe Sobczak	1997	Bear Lake
Utah chub	1.81 lbs.	Eugene Bastian	1992	Canyon Ferry Reservoir
Walleye	16.63 lbs.	Danny Spence	2000	Fort Peck Reservoir
White bass	2.25 lbs.	Vernon Pacovsky	1998	Missouri River
White crappie	3.68 lbs.	Gene Bassett	1996	Tongue River Reservoir
White sturgeon	96.00 lbs.	Herb Stout	1968	Kootenai River
White sucker	5.33 lbs.	Fred Perry	1983	Nelson Reservoir
Yellow bullhead	0.93 lbs.	Carl Radonski	1998	Tongue River Reservoir
Yellow perch	2.37 lbs.	Vernon Schmid	1988	Ashley Lake

ANSWERS TO COMMONLY ASKED QUESTIONS

QUESTION: Did migrating sea-run salmon or steelhead ever reach Montana?

ANSWER: Fisheries scientists have scoured published and unpublished records of the historical spawning areas of Pacific salmon and steelhead (rainbow trout that go to sea when young and return to freshwater to spawn), and there is no evidence that these fishes reached Montana, at least not since the last glaciation. Their migrations were evidently blocked by waterfalls. However, white sturgeon and redband trout (also referred to as inland or interior rainbow trout) occur naturally in Montana's portion of the Kootenai River Drainage downstream from Kootenai Falls. Both had their origins on the Pacific Coast, and the fact they are in Montana leads to the conjecture that spawning runs of Pacific salmon or steelhead also could have reached this section of the Kootenai River at one time.

QUESTION: Why do some trout have pink flesh while others have white flesh?

ANSWER: Flesh color is related to a trout's diet. Trout, along with salmon and some other fishes, can extract carotenoid pigmented oils from food and incorporate these oils into their flesh. Crustaceans (for example, water fleas, scuds, and crayfishes) are rich in pigmented oils. Trout with a diet high in crustaceans have pink flesh and salmon-colored eggs; those eating insects and other foods with little or no pigmented oils have white flesh and cream-colored eggs.

QUESTION: What are cold-, cool-, and warmwater fishes?

ANSWER: Fish are coldblooded—that is, their temperature is about the same as the water surrounding them. This greatly influences their biology and, in turn, their distribution. Members of the trout family are adapted to live in water temperatures lower than 65° F and are examples of coldwater fishes. Sunfishes are known as warmwater fishes. To thrive they must have summer water temperatures of 75° F and higher. Northern pike, walleye, and yellow perch prefer summer temperatures in the midrange, 65° to 75° F, and have come to be known as coolwater fishes.

QUESTION: What is a char?

ANSWER: Char (also charr) is a name often given to trouts in the genus *Salvelinus*, which in Montana are brook, bull, and lake trout. They are readily distinguished from the other trouts (genera *Oncorhynchus* and *Salmo*), by their "reversed" foreground-background color scheme. Rainbow, cutthroat, golden, and brown trout always have foreground markings (spots) that are darker than the background; chars have a relatively darker background, typically gray, with lighter spots.



ADDITIONAL SOURCES OF INFORMATION ON MONTANA FISHES

Many readers will desire additional information on Montana fishes. Of the many excellent publications available, the following are particularly pertinent:

The first two books contain information on identification, distribution, breeding, and feeding habits of Montana fishes, and the history of fish collections and introductions into Montana. In addition, Brown presents age and growth data for each species.

Brown, C. J. D. *Fishes of Montana*. Big Sky Books, Montana State University, Bozeman, 1971. 207 pp.

Weisel, George F. *Fish Guide for Intermountain Montana*. Montana State University Press, Missoula, 1957. 88 pp. Out of print, but held by the Montana State Library in Helena; it can be borrowed from a local library through interlibrary loan.

Next is a revised scientific key to the identification of Montana fishes. It serves to update *Fishes of Montana*:

Gould, William R. *Key to the Fishes of Montana*. Biology Department, Montana State University, Bozeman, 1995. 22 pp.

The following three books were written for areas other than Montana, but between them they contain in-depth information on all fishes found in Montana waters except tropical aquarium species.

Baxter, George T. and Michael D. Stone. *Fishes of Wyoming*. Wyoming Game and Fish Department, 1995. 290 pp. Features an excellent color photograph of each species in an underwater setting.

Pflieger, William L. *The Fishes of Missouri*. Missouri Department of Conservation, revised 1991. 343 pp. Has unsurpassed illustrated keys.

Scott, W. B. and E. J. Crossman. *Freshwater Fishes of Canada*. Bulletin 184, Fisheries Research Board of Canada, reprinted with corrections 1985. 966 pp. A tremendous source book—extremely detailed descriptions of individual species plus extensive life history accounts. Includes over 80 percent of the fishes found in Montana.



Families in this list are in phylogenetic order—that is, from the most primitive to the most advanced. Within families the scientific names (genus and species) are listed alphabetically. This is different from the arrangement of fishes throughout this book, which is based on the type and position of fins on the back (see pp. 2–3).

SYMBOLS

N: Native

I: Introduced

P: Possibly native

C: A fish of special concern

E: Listed as endangered under the federal Endangered Species Act.
Retains status as state fish of special concern.

†: Designated a game fish in Montana statutes.

‡: Designated a nongame fish in need of management in Administrative Rules of Montana.

STURGEON FAMILY	ACIPENSERIDAE
N † E White sturgeon	<i>Acipenser transmontanus</i>
N † E Pallid sturgeon	<i>Scaphirhynchus albus</i>
N † Shovelnose sturgeon	<i>Scaphirhynchus platyrhynchus</i>
PADDLEFISH FAMILY	POLYODONTIDAE
N † C Paddlefish	<i>Polyodon spathula</i>
GAR FAMILY	LEPISOSTEIDAE
NC Shortnose gar	<i>Lepisosteus platostomus</i>
MOONEYE FAMILY	HIODONTIDAE
N Goldeye	<i>Hiodon alosoides</i>
MINNOW FAMILY	CYPRINIDAE
I Goldfish	<i>Carassius auratus</i>
N Lake chub	<i>Couesius plumbeus</i>
I Common carp	<i>Cyprinus carpio</i>
I Utah chub	<i>Gila atraria</i>
N Western silvery minnow	<i>Hybognathus argyritis</i>
N Brassy minnow	<i>Hybognathus bankinsoni</i>
N Plains minnow	<i>Hybognathus placitus</i>
NC Sturgeon chub	<i>Macrhybopsis gelida</i>
NC Sicklefın chub	<i>Macrhybopsis meeki</i>
NC Pearl dace	<i>Margariscus margarita</i>
N Peamouth	<i>Mylocheilus caurinus</i>
I Golden shiner	<i>Notemigonus crysoleucas</i>
N Emerald shiner	<i>Notropis atherinoides</i>
I Spottail shiner	<i>Notropis hudsonius</i>
N Sand shiner	<i>Notropis stramineus</i>
N Northern redbelly dace	<i>Phoxinus eos</i>
NC Northern redbelly dace X finescale dace (hybrid)	<i>Phoxinus eos x P. neogaeus</i>

N	Fathead minnow	<i>Pimephales promelas</i>
N	Flathead chub	<i>Platygobio gracilis</i>
N	Northern pikeminnow	<i>Ptychocheilus oregonensis</i>
N	Longnose dace	<i>Rhinichthys cataractae</i>
N	Redside shiner	<i>Richardsonius balteatus</i>
N	Creek chub	<i>Semotilus atromaculatus</i>

SUCKER FAMILY

CATOSTOMIDAE

N	River carpsucker	<i>Carpionodes carpio</i>
N	Longnose sucker	<i>Catostomus catostomus</i>
N	White sucker	<i>Catostomus commersoni</i>
N	Largescale sucker	<i>Catostomus macrocheilus</i>
N	Mountain sucker	<i>Catostomus platyrhynchus</i>
NC	Blue sucker	<i>Cycleptus elongatus</i>
N	Smallmouth buffalo	<i>Ictiobus bubalus</i>
N	Bigmouth buffalo	<i>Ictiobus cyprinellus</i>
N	Shorthead redhorse	<i>Moxostoma macrolepidotum</i>

BULLHEAD CATFISH FAMILY

ICTALURIDAE

I	Black bullhead	<i>Ameiurus melas</i>
I	Yellow bullhead	<i>Ameiurus natalis</i>
N†	Channel catfish	<i>Ictalurus punctatus</i>
N	Stonecat	<i>Noturus flavus</i>

PIKE FAMILY

ESOCIDAE

N†	Northern pike	<i>Esox lucius</i>
I†	Tiger muskellunge (hybrid)	<i>Esox lucius</i> x <i>E. masquinongy</i>

MUDMINNOW FAMILY

UMBRIDAE

I	Central mudminnow	<i>Umbra limi</i>
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SMELT FAMILY

OSMERIDAE

I	Rainbow smelt	<i>Osmerus mordax</i>
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TROUT FAMILY

SALMONIDAE

I†	Cisco	<i>Coregonus artedii</i>
P†	Lake whitefish	<i>Coregonus clupeaformis</i>
I†	Golden trout	<i>Oncorhynchus aguabonita</i>
N†C	Yellowstone cutthroat trout	<i>Oncorhynchus clarki bouvieri</i>
N†C	Westslope cutthroat trout	<i>Oncorhynchus clarki lewisi</i>
I†	Rainbow trout	<i>Oncorhynchus mykiss</i>
N†C	Redband trout	<i>Oncorhynchus mykiss subspecies</i>
P†	Kokanee	<i>Oncorhynchus nerka</i>
I†	Chinook salmon	<i>Oncorhynchus tshawytscha</i>
N†	Pygmy whitefish	<i>Prosopium coulteri</i>
N†	Mountain whitefish	<i>Prosopium williamsoni</i>
I†	Brown trout	<i>Salmo trutta</i>
I†	Tiger trout (hybrid)	<i>Salmo trutta</i> x <i>Salvelinus fontinalis</i>
N†C	Bull trout	<i>Salvelinus confluentus</i>
I†	Brook trout	<i>Salvelinus fontinalis</i>

N†	Lake trout	<i>Salvelinus namaycush</i>
N†	Arctic grayling	<i>Thymallus arcticus</i>
N†C	Arctic grayling (<i>fluvial</i>)	<i>Thymallus arcticus</i>

TROUT-PERCH FAMILY

PERCOPSIDAE

NC	Trout-perch	<i>Percopsis omiscomaycus</i>
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CODFISH FAMILY

GADIDAE

N†	Burbot	<i>Lota lota</i>
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KILLIFISH FAMILY

CYPRINODONTIDAE

I	Plains killifish	<i>Fundulus zebrinus</i>
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LIVEBEARER FAMILY

POECILIIDAE

I	Western mosquitofish	<i>Gambusia affinis</i>
I	Sailfin molly	<i>Poecilia latipinna</i>
I	Shortfin molly	<i>Poecilia mexicana</i>
I	Green swordtail	<i>Xiphophorus helleri</i>
I	Variable platyfish	<i>Xiphophorus variatus</i>

STICKLEBACK FAMILY

GASTEROSTEIDAE

N	Brook stickleback	<i>Culaea inconstans</i>
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SCULPIN FAMILY

COTTIDAE

N	Mottled sculpin	<i>Cottus bairdi</i>
N	Slimy sculpin	<i>Cottus cognatus</i>
N	Torrent sculpin	<i>Cottus rhotheus</i>
NC	Spoonhead sculpin	<i>Cottus ricei</i>

TEMPERATE BASS FAMILY

PERCICHTHYIDAE

I	White bass	<i>Morone chrysops</i>
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SUNFISH FAMILY

CENTRARCHIDAE

I	Rock bass	<i>Ambloplites rupestris</i>
I	Green sunfish	<i>Lepomis cyanellus</i>
I	Pumpkinseed	<i>Lepomis gibbosus</i>
I	Bluegill	<i>Lepomis macrochirus</i>
I†	Smallmouth bass	<i>Micropterus dolomieu</i>
I†	Largemouth bass	<i>Micropterus salmoides</i>
I‡	White crappie	<i>Pomoxis annularis</i>
I‡	Black crappie	<i>Pomoxis nigromaculatus</i>

PERCH FAMILY

PERCIDAE

N	Iowa darter	<i>Etheostoma exile</i>
I‡	Yellow perch	<i>Perca flavescens</i>
N†C	Sauger	<i>Stizostedion canadense</i>
I†	Walleye	<i>Stizostedion vitreum</i>
I†	Saugeye (hybrid)	<i>Stizostedion canadense</i> x <i>S. vitreum</i>

DRUM FAMILY

SCIAENIDAE

N	Freshwater drum	<i>Aplodinotus grunniens</i>
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INDEX

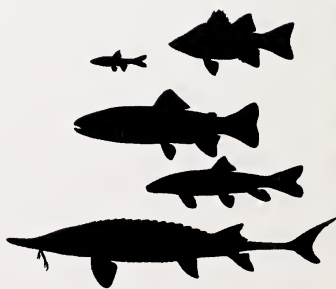
Boldface page numbers indicate color illustrations.

See pp. 89–91 for list of scientific names.

Arctic grayling	59, 44	Sturgeon	29
Bass		Utah	22
Calico	69	Cisco	62
Largemouth	75, 47	Coarsescale sucker	17
Northern smallmouth	74	Codfish family	66
Rock	73, 46	Common carp	21
Smallmouth	74, 47	Common sucker	17
White	80	Common sunfish	70
Bigmouth buffalo	19	Counts used in fish identification	6
Black Bass		Crappie	
Largemouth	75	Black	69, 45
Smallmouth	74	White	68, 45
Black bullhead	65, 44	Creek chub	27
Black crappie	69, 45	Cutthroat trout	52, 53, 42
Blackspotted cutthroat trout	52, 53	Blackspotted	52, 53
Blackspotted trout	53	Upper Missouri	52
Blue sucker	19	Westslope	52, 42
Blueback	50	Yellowstone	53, 42
Bluegill	71, 45	Dace	
Bluegill sunfish	71	Finescale	25
Books, reference	88	Horned	27
Brassy minnow	29	Longnose	26
Bronze-back	74	Northern redbelly	25
Brook stickleback	67	Northern redbelly x finescale hybrid	25
Brook trout	56, 43	Pearl	26
Eastern	56	Darter, Iowa	83
Brown trout	55, 43	Dolly Varden	57
Buffalo		Drum family	76
Bigmouth	19	Drum, freshwater	76
Smallmouth	20	Eastern brook trout	56
Bull trout	57, 43	Emerald shiner	32
Bullhead	77, 78, 79	Endangered species, defined	7
Black	65, 44	Fathead minnow	30
Yellow	65	Finescale dace	25
Bullhead catfish family	64	Finescale sucker	18
Burbot	66, 40	Fish	
Calico bass	69	cold, cool, and warmwater, defined	87
Carp		color	4
Common	21	external features	5
Leather	21	lengths	4
Mirror	21	of special concern, defined	7
Silver	20	names	4
White	20	Fishes, list of	89–91
Carp sucker, river	20	Flat	52
Cat, spoonbill	12	Flathead chub	28
Catfish (bullhead catfish) family	64	Flesh color, trout	87
Catfish, channel	64, 44	Freshwater drum	76
Central mudminnow	34	Gar family	13
Channel catfish	64, 44	Gar, shortnose	13
Char (charr) defined	87	German brown trout	55
Chinook salmon	49, 41	Gill rakers, illustration	6, 50, 70
Chub		Glossary	7–8
Creek	27	Goggle eye	73
Flathead	28	Golden shiner	24
Lake	27	Golden trout	54, 42
Sicklefin	28	Goldeye	15, 41

Goldfish	22	Northern smallmouth bass	74
Grayling		Northern pikeminnow	23
Arctic	59, 44	Paddlefish	12, 40
Montana	59	Paddlefish family	12
Green sunfish	72, 46	Palatine teeth, illustration	77
Green swordtail	38	Pallid Sturgeon	10
Hackleback	11	Peamouth	23
Hammer handle	14	Pearl dace	26
Herring, lake	62	Perch	81
Horned dace	27	Perch family	81
Inland rainbow trout	51	Perch, yellow	81, 46
Interior rainbow trout	51	Pickerel	14
Iowa darter	83	Pike	14
Jack	14	Northern	14, 40
Kamloops	51	Sand	82
Killifish family	35	Wall-eyed	82
Killifish, plains	35	Pike family	14
King salmon	49	Pikeminnow, northern	23
Kokanee	50, 41	Pikeperch, yellow	82
Kokanee salmon	50	Plains killifish	35
Lake chub	27	Plains minnow	31
Lake herring	62	Platyfish, variable	38
Lake trout	58, 43	Pumpkinseed	70, 45
Lake whitefish	61	Pygmy whitefish	60
Largemouth bass	75, 47	Rainbow smelt	39
Largemouth black bass	75	Rainbow trout	51, 42
Largescale sucker	17	Inland	51
Leather carp	21	Interior	51
Ling	66	Record fish	85-86
Livebearer family	36	Redband trout	51
Loch Leven trout	55	Redbelly	52
Longnose dace	26	Redbelly dace, northern	25
Longnose sucker	18	Redeye	73
Mackinaw trout	58	Redhorse, shorthead	16
Minnow		Redside shiner	24
barbel characteristics	33	River carpsucker	20
Brassy	29	Rock bass	73, 46
Fathead	30	Rocky mountain whitefish	60
lateral line scale counts	33	Sailfin molly	37
Plains	31	Salmon	
Western silvery	31	Chinook	49, 41
Minnow family	21	King	49
Mirror carp	21	Kokanee	50, 41
Molly		Silver	51
Sailfin	37	Salmon migration	87
Shortfin	37	Sand pike	82
Montana grayling	59	Sand shiner	33
Montana state fish	52, 53	Sauger	82, 47
Mooneye family	15	Sculpin	
Mosquitofish, western	36	Mottled	79
Mottled sculpin	79	Slimy	77
Mountain trout	52	Spoonhead	78
Mountain sucker	18	Torrent	79
Mountain whitefish	60, 44	Sculpin family	77
Muddler	79	Shad	15
Mudminnow family	34	Sheepshead	76
Mudminnow, central	34	Shiner	15
Muskellunge, tiger	14	Emerald	32
Native	52, 53	Golden	24
Northern	14	Redside	24
Northern pike	14, 40	Sand	33
Northern redbelly dace	25	Spottail	32
Northern redbelly dace x finescale dace hybrid	25	Shortfin molly	37

Shorthead redhorse	16	German brown	55
Shorthead gar	13	Golden	54, 42
Shovelnose sturgeon	11, 40	Inland rainbow	51
Sicklefin chub	28	Interior rainbow	51
Silver	50, 51	Lake	58, 43
Silver carp	20	Loch Leven	55
Silver salmon	51	Mackinaw	58
Silvery minnow, western	31	Mountain	52
Skipjack	15	Rainbow	51, 42
Slimer	14	Redband	51
Slimy sculpin	77	Tiger	56
Smallmouth bass	74, 47	Upper Missouri cutthroat	52
Smallmouth bass, northern	74	Von Behr	55
Smallmouth black bass	74	Westslope cutthroat	52, 42
Smallmouth buffalo	20	Yellowstone cutthroat	53, 42
Smelt family	39	Trout family	48
Smelt, rainbow	39	Trout-perch	63
Spawning seasons	84	Trout-perch family	63
Spoonbill cat	12	Tullibee	62
Spoonhead sculpin	78	Upper Missouri cutthroat trout	52
Spottail shiner	32	Utah chub	22
Squaretail	56	Variable platyfish	38
Steelhead	51, 87	Visual key to fish families	2-3
Stickleback family	67	Von Behr trout	55
Stickleback, brook	67	Wall-eyed pike	82
Stonecat	64	Walleye	82, 47
Sturgeon		Western mosquitofish	36
Pallid	10	Western silvery minnow	31
Shovelnose	11, 40	Westslope cutthroat trout	52, 42
White	9	White bass	80
Sturgeon chub	29	White carp	20
Sturgeon family	9	White crappie	68, 45
Sucker		White sturgeon	9
Blue	19	White sucker	17
Coarsescale	17	Whitefish	
Common	17	Lake	61
Finescale	18	Mountain	60, 44
Largescale	17	Pygmy	60
Longnose	18	Rocky Mountain	60
Mountain	18	Yellow bullhead	65
White	17	Yellow perch	81, 46
Sucker family	16	Yellow pikeperch	82
Sunfish		Yellowstone cutthroat trout	53, 42
Bluegill	71		
Common	70		
Green	72, 46		
Sunfish family	68		
Swordtail, green	38		
Temperate bass family	80		
Threatened species, defined	8		
Tiger muskellunge	14		
Tiger trout	56		
Torrent sculpin	79		
Tropical aquarium fishes	37-38		
Trout			
Blackspotted	53		
Blackspotted cutthroat	52, 53		
Brook	56, 43		
Brown	55, 43		
Bull	57, 43		
Cutthroat	52, 53, 42		
Eastern brook	56		
flesh color	87		





**Do not introduce any fish
without authorization from
Montana Fish, Wildlife & Parks.
It is not only the wrong thing
to do, it is illegal.**

THE PERILS OF ILLEGAL FISH PLANTS

Sport fish populations have been severely damaged or eliminated in almost every lake and stream where fish have been illegally introduced, and there have been more than 295 documented cases of illegal transplants at 181 locations in Montana through 1995. Yellow perch have been the most common problem fish. Northern pike follow in occurrence and damage done, and even minnows and suckers dumped from bait buckets have caused irreversible damage.

Problems from the new species include voracious predation that decimates existing game or forage fishes, competition for food and space, interbreeding or hybridization with closely related species, introduction of diseases and parasites, and even alteration of the aquatic habitat as when common carp is introduced.

Sometimes there is a cure. The entire fish population in a relatively small lake can be killed with chemicals and the lake restocked with desirable species, but this is costly and seldom feasible. Chemical fish eradication is not attainable in streams, large lakes, or even small lakes that have weed beds, springs, or significant inflow and outflow.

Please help maintain Montana's outstanding fisheries by protecting against illegal fish plants and helping educate others on its perils.



ABOUT THE AUTHORS

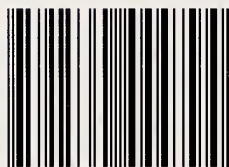
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